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ABSTRACT

A two-year research project was conducted to investigate factors that promote second language acquisition and to monitor changes in these factors associated with increased training and proficiency in the second language. Two French programs in London, Ontario second language program beginning in grade 7 and the secondary school French program in London, Ontario, were examined. A battery of tests was developed to assess students' motivation to learn a second language. Information is presented on the elements of experimental design and analysis, the test construction phase of the attitude/motivational test battery, relationships among the attitude/motivational tests and several measures of French achievement, the soundness of the measuring instruments, a formula for predicting second language achievement, results of two separate studies on language dropouts, a different research orientation focusing on stereotypes about French Canadians, English Canadians, "French teacher," "French course," and "English course." A theory that is being developed to integrate the findings on the relationship between French achievement and the three areas of intelligence, language aptitude, and motivation is outlined. Test materials used in the initial study and the validation study and correlation matrices produced to generate factor analytic information are appended. (SW)

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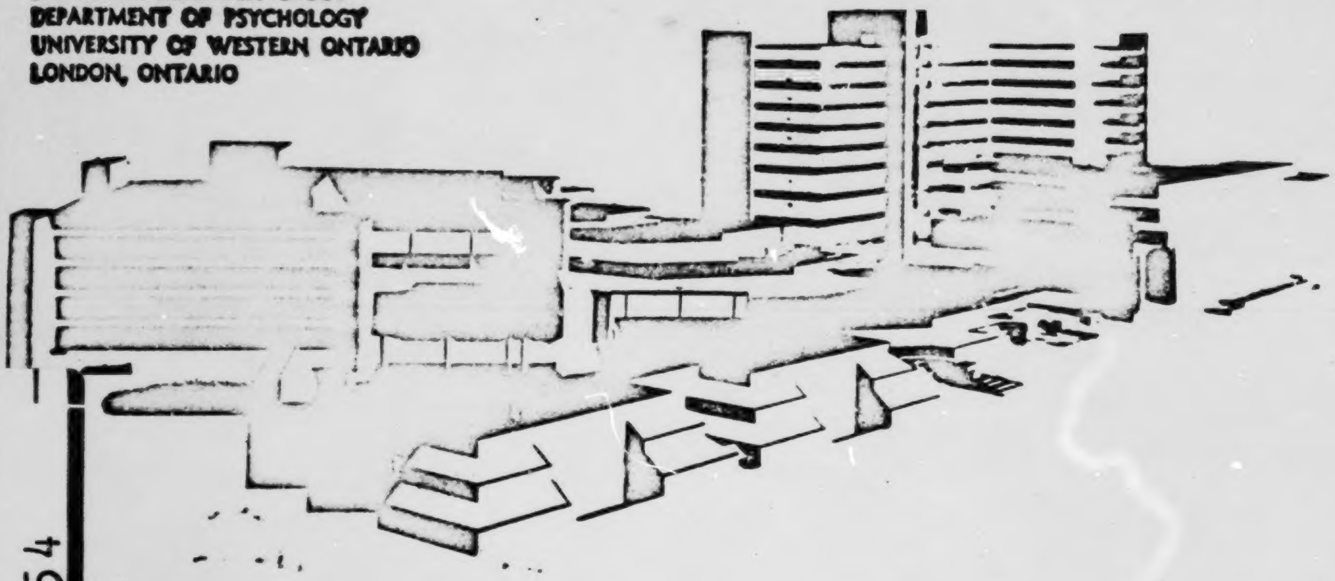

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SECOND LANGUAGE ACQUISITION:

A SOCIAL PSYCHOLOGICAL APPROACH [1]

ROBERT C. GARDNER and PADRIC C. SMYTHE

LANGUAGE RESEARCH GROUP

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[1] This bulletin is a somewhat abbreviated version of an earlier report to the Ontario Ministry of Education. Funds for this second printing were supplied by the Language Administration Branch, Office of the Secretary of State, Government of Canada in the form of a grant entitled "Attitudes and Motivation in Learning French".

DEPARTMENT OF PSYCHOLOGY

THE UNIVERSITY OF WESTERN ONTARIO LONDON, CANADA

SECOND LANGUAGE ACQUISITION:

A SOCIAL PSYCHOLOGICAL APPROACH[1]

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[1] Final Report, Ontario Ministry of Education, Grant-in-aid to Education. Original proposal titled, An Extensive Analysis of the Role of Motivation and Language Aptitude in Determining French Achievement of Students in Grades VII to XI.

PREFACE

We take considerable pleasure in acknowledging the help, support, and general encouragement we received from many individuals and institutions during the course of the project described in this report.

In the first place we must emphasize that none of this research would have been possible without a Grant-in-Aid of Educational Research provided us by the Ontario Ministry of Education. Furthermore, we gratefully acknowledge the invaluable assistance of both the administration and the board of trustees of the Board of Education for the City of London.

We are also very pleased to express our appreciation to all of the principals, department heads, and French teachers, for their considerable aid. We cannot name them specifically because of a moral commitment on our part to preserve anonymity with respect to the schools and the students tested. We trust, however, that they will understand and that they will realize how much we appreciate their cooperation in allowing us to disrupt their class schedules. Also, we owe a considerable debt of gratitude to the students themselves who cooperated most generously with our requests. Special thanks can, however, be given to the following individuals within the London school system who assisted us in all phases of the research: Mr. G. Dumas, Oral French Consultant; Mr. G. C. Jutras, Moderns Consultant; Mr. G. S. Kidd, formerly Moderns Consultant and now Moderns Head of Oakridge Secondary School; and Mr. M. Zelman, former Vice-principal, Oakridge Secondary School. Since, part of the research contained in this report was conducted in Chatham, Ontario we also acknowledge the assistance of Mr. R. Martin, Superintendent of Program and Personnel, Kent County Board of Education.

Finally, we must mention the enormous contribution of our project staff, both past and present. Our original "team" consisted of Betsy Gibbons, Louis

Gliksman, and Cindy Smythe as Research Assistants, and Gail Campbell as Secretary, and their assistance and enthusiasm contributed greatly to the enjoyment of the project. Betsy, Louis and Gail have since moved on, and only Cindy remains from the "old team". She has since been joined by Peggy Davidson as a Research Assistant, and Vonnie Kirk as Secretary. We are fortunate that this "new team" is equally enthusiastic and dedicated to their profession. To them all we express our heartfelt appreciation.

During the course of the research itself, R. C. Gardner was Professor of Psychology, University of Western Ontario, P. C. Smythe was Research Associate, Educational Research Services, London Board of Education, D. M. Kirby was a Doctoral Candidate in Psychology, University of Western Ontario and J. R. Bramwell was Chief of Measurement and Evaluation Services, London Board of Education.

Preparation of this manuscript was facilitated by a grant from the Language Administration Branch, Department of the Secretary of State, Ottawa to R. C. Gardner and P. C. Smythe which provided partial salaries to them. This support has permitted them to continue investigating many of the hypothesis generated in this report, and this has contributed significantly to the formulation of many of the ideas expressed herein.

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TABLE OF CONTENTS

Chapter I - Introduction

Chapter II - Principles of Design and Analysis Relevant to the Present Investigations

Chapter III - Attitudes, Motivation, and Achievement: The Initial Study

Chapter IV - Aptitude, Attitudes, Motivation and Achievement: The Validation Study

Chapter V - The Dropout Problem

Chapter VI - Stereotypes and Second-Language Learning

Chapter VII - Toward a Theory: The Studies in Perspective

References

Appendices

A - Materials Used in the Initial Study

B - Additional Materials Used in the Validation Study

C - Correlation Matrices for the Initial Study

D - Correlation Matrices for the Validation Study

CHAPTER 1

INTRODUCTION

The existence of two recognized language groups in Canada, coupled with a common desire for national unity, places a large responsibility on educational institutions to promote second language achievement. In many countries throughout the world, second language training forms some part of the educational curriculum, but possibly only in Canada can it be said that bilingualism is, or at least should be, an educational goal truly relevant to the needs of the country. The need for bilingualism has been stressed at the Federal government level in both their programs for second language training, and the premium placed on bilingual skills of government employees. There are indications that similar developments are taking place in the private sector (c.f., Maltais, 1973). Probably the greatest challenge to national bilingualism resides in generally unilingual areas, primarily the English ones. Students in such areas lack the bilingual milieu which can serve to reinforce second-language skills, and are faced with the "realization" that, because of the overwhelming influence of the U.S.A., English has a dominant position in the North American context.

The increased interest in second language learning, demonstrated by Canadian governmental and educational officials, is paralleled by an active response on the part of a large number of Canadian researchers. A small sample of some of the more ambitious of these promising projects includes: the St. Lambert Project (e.g., Lambert and Tucker, 1972), the Bilingual Education Project of the Ontario Institute for Studies in Education (e.g., Swain, 1974), the Ottawa-Carlton French Project (e.g., Halpern and Kirby, 1973), and the Ottawa Roman Catholic Separate School French Evaluation Project (e.g., Edwards and Casserly, 1971, 1972, 1973). These research programs have significant implications not only because of their theoretical relevance but also for their great practical potential. The same we believe is true for the research program to be described in the following chapters, and we hope that the material presented will be read seriously and critically by both teachers and researchers alike. It goes without saying that for true progress in this area, the teacher and researcher must join forces and approach the problem as a team.

A General Overview of the Present Research

This report summarizes the results of a two-year research project designed both to investigate factors which promote second language acquisition and also to monitor changes in these factors associated with increased training and proficiency in the second language. A particularly important aspect of this research involved the careful construction of measuring instruments to permit the present investigations to be rigorously conducted. At one level, the research reported here may be viewed as an evaluation of an existing second language program, specifically the French program beginning in Grade 7 which was initiated in the London Public School system in 1966. However, the research project also examined students in London's secondary school French program which has a considerably longer history. The aim of this evaluation was not to uncover specific successes or failures in these programs, but rather to determine their overall degree of success by examining aspects of the French language competence of the students, as well as their understanding and appreciation of French culture in Canada. In a more general sense, and perhaps more significantly, the research represents an attempt to develop an understanding of factors which promote French language competence in a largely English-speaking cultural milieu. We entertain the hopeful expectation that a knowledge of such factors will encourage the development of techniques which will promote an even greater level of French competence in all such milieus.

The aims of the French program for grades 7 to 11 were enunciated by the Ontario Ministry of Education and accepted by London in 1966 (Curriculum Guide 1 -

15A (7)). Those for grade 7 are reproduced below because they reflect the general orientation for the entire program and are highly applicable to the present research. Any evaluation of student performance must be made in the light of the objectives of the educational program in which the students participate. Furthermore, these aims would appear to be applicable to French language programs not only in Ontario but throughout much of the rest of Canada.

AIMS OF THE FRENCH PROGRAM

GENERAL AIMS

1. Attitude Development

   a) In Canada, where a large proportion of the population is French-speaking, and where the intermingling of the French and English-speaking peoples will increase with time, it is important that each should have knowledge of the other's language for the purpose of communication and better understanding.

   A major aim of a French program, therefore, should be to foster goodwill toward, and understanding of, fellow Canadians who speak French.

   b) The effort required to communicate in French will help the student to appreciate the difficulties of children learning English as a second language.

   c) The teaching of the respective language skills when the child is psychologically and physiologically receptive should result in rewarding experiences in the language learning process and thereby promote favourable attitudes toward second language learning at higher levels.

2. Linguistic Objectives

It should be the aim of a French program to develop competence in hearing (auditory discrimination), understanding, speaking, reading and writing French within the limits of the course, for the purpose of direct communication with native speakers.

3. Cultural Objectives

It should be the aim of a French program to increase the pupil's awareness of the way other people live, and of the way they think and express themselves through the medium of their language.

SPECIFIC AIMS

a) to develop the pupil's ability to understand spoken French at a normal rate of speed within the limits of the course of study.

b) to enable the pupil to express himself fluently with an acceptable accent and intonation within the limits of the structures and vocabulary contained in the course of study.

c) to establish, through hearing, understanding and speaking French, a solid basis of language patterns upon which the pupil may construct and expand both formally, through further study at the secondary level, and informally, through private study or contact with French-speaking people.

d) to effect the transition from oral skills to those of reading and writing, so that there be maximum transfer of the oral speech habits to the written forms and minimum interference of the written with the oral.

The preceding list of curricular aims and objectives served as a starting point for the present research project and gave it an initial point of focus. Next it was necessary to attempt to determine what student characteristics might either facilitate or hinder the attainment of these goals.[1] Fortunately there exists a formidable body of previous research and teachers' experience to which we were able to turn (e.g., Gardner and Lambert, 1972; Jakobovits, 1970; Rivers, 1968). Moreover, because much work had already been completed in examining the nature and role of language aptitude factors in second language acquisition (e.g., Carroll and Sapon, 1959; Culhane, 1970; Lutz, 1967), our primary emphasis became one of investigating the attitude/motivational domain.

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[1] It must be emphasized in passing that we specifically chose to ignore such important potential sources of variation in the successes or failures of second language programs as teaching methods, curricular emphasis, and teacher experience or competentcy. In doing so we did not mean to imply that these are not valid and significant issues, rather it was simply necessary to limit the scope of our project to a mangeable size. Moreover, a substantial project (see Halpern and Kirby, 1973) is currently addressing itself specifically to these matters.

The concept of language aptitude refers to a subset of verbal abilities which are required for successful second-language acquisition. The history of language aptitude assessment is relatively long. One review article of research in this area was written as early as 1929 (Henmon, 1929), and discussions of theoretical and methodological issues have an equally long history (see, for example, Symonds, 1929). With the advent of more sophisticated technology, both with respect to ability assessment and analytical procedures and equipment, considerable progress has been made in the development of language aptitude tests (see Carroll, 1963). At the present time, there are a number of reliable and valid tests of language aptitude available to teachers which can be used both as diagnostic and prognostic instruments (Carroll, 1963). Lutz (1967) has also provided a very thorough and detailed review of the recent literature on the development of foreign language aptitude tests. Three of the best known instruments are the Modern Language Aptitude Test (MLAT) (Carroll and Sapon, 1959), the Elementary form of the Modern Language Aptitude Tests (EMLAT) (Carroll and Sapon, 1967), and the Pimsleur Language Aptitude Battery (PLAB) (Pimsleur, 1966).

Each of these tests has received considerable attention and have proven to be of great value. In the most recent edition of the Mental Measurements Yearbook (Buros, 1972), these tests along with other tests of a similar nature are reviewed in some detail. Although there are positive aspects associated with all of them, the research literature provides more empirical support for the tests developed by Carroll and Sapon (e.g., Culhane, 1970). One unique feature of the

Pimsleur Language Aptitude Battery, however, which has been commented upon is that, unlike the two produced by Carroll and his colleagues it attempts to provide an assessment of the student's motivation (interest) to learn the language. It is unfortunate that the assessment is one of poor quality. Hakstian (see Buros, 1972, p. 544) states for example:

> "Part 2, Interest, is assessed via a single item with a 5-point scale running from "Rather uninterested" (in studying a modern foreign language) through "Strongly interested." Such an assessment seems very unreliable, since the measurement of such fluctuating, noncognitive constructs is somewhat unreliable at best."

There is a considerable body of research literature, as well as observations by teachers, that indicates that a student's motivation to acquire a second language can be as important a determinant of success in acquiring a second language as is his language aptitude. This research is reviewed in a later section of this chapter and it indicates that while the motivation to acquire a second language is important in determining achievement, the motivational component is itself a complex interaction of interest in the subject matter, a willingness to work hard for achievement, and attitudinal variables (fostered in the home and possibly at school) associated with the specific language group and groups in general. This particular motivational complex has been referred to as an integrative motive (see Gardner, 1966) and, because of its demonstrated importance and its complex nature, it seeemed imperative that a battery of tests be made available to provide reliable and valid measures of individual differences in it. Because of its complexity, it is not surprising that a simple single item assessment of motivation like that provided by the Pimsleur Language Aptitude Battery (Pimsleur, 1966) has proved inadequate.

A typical language aptitude battery requires approximately one hour to administer to students. In view of the demonstrated importance of motivational components and their relative independence of the aptitude component, it appeared obvious that similar attention in terms of testing time be devoted to the assessment of motivational components. The development of a standardized battery, comparable to that produced for the assessment of language aptitude, would be a major step forward in the prediction of individual differences in second language achievement. Like the aptitude tests, such tests could be used for both prognosis and diagnosis. Unlike language aptitude, however, an appreciation of students' motivational strengths or weaknesses would permit the teacher to modify the curriculum to either capitalize on the strengths or counteract the weaknesses (see Barkman, 1969). Such modifications would be active in that motivational components are amenable to change, albeit not without considerable effort; modifications of curricula to account for differences in language aptitude, on the other hand, are more of a passive nature. Verbal abilities are not easily changed (see Lambert, 1961) so that modifications in a curriculum made on the basis of a knowledge of the students' language aptitudes are such as to permit more rapid progress (in the case of high aptitude students) or more opportunities to learn (in the case of low aptitude students). Curriculum changes cannot result in changes in students' language aptitude. Changes can, however, influence students' motivation and thus their achievement. Hence, to a considerable extent it could be argued that reliable and valid indices of student motivation provide the greatest possibilities for ultimately improving second-language proficiency among all students in the community.

Although the research presented in this report is unique in that it focuses on the development of a battery of tests to assess students' motivation to learn a second language, it is not unique in emphasizing motivational constructs. Second-language teachers have been concerned with motivational aspects for a number of years, and considerable ingenuity has been shown in developing ways of attempting to improve students' motivation to learn the second language. In order to promote an interest in actively using the second language, teachers have used modifications of the old "twenty questions" game, have had students write and direct their own plays, have taught students French songs, and have encouraged them to write their own newspapers or produce mock radio broadcasts. Outside of the classroom, many other motivational props have been developed. In many schools French clubs are encouraged, "French days" are held, and often excursions to the other language community are conducted. The list is endless! About the only limiting factor is the ingenuity of language teachers (and they often seem to be a highly ingenious and energetic group). It seemed all the more unfortunate that with so many ideas for manipulating the motivation of the students, a battery of standardized tests of motivation with which to monitor the success or failure of these innovations did not exist.

The existence of a battery of motivational indices would permit educators to assess the role of motivation in learning a second language. At one level, teachers could simply determine the relationship between individual differences in motivation and individual differences in second-language achievement. There are many other exciting possibilities, however! The existence of such a battery would permit educators to assess the effects of various types of incentive programs. One study conducted in the course of the present project for example, investigated the effects on motivational characteristics of a four day controlled excursion to Quebec City. Only an experimental version of the proposed battery was used in a pre-trip/post-trip design in which 211 students were tested, but the results demonstrated a considerable increase in grade 8 students' appreciation of the cultural benefits of the trip, an increase in favourable attitudes towards French Canadians, and an increased interest in learning French for communicational purposes. Actual motivation to learn French did not change, but the change in attitudes noted above indicated some of the benefits of the excursion program. It is perhaps noteworthy that despite the fact that such excursions are relatively commonplace, a review of the literature failed to uncover comparable assessments of such trips. A battery of tests to measure motivational components would permit greater elaboration of the effects of similar trips varying in duration and type of exposure to the other language community. Such tests could also permit an assessment of the effects of "French Days", special motivationally based programs, and the other innovations currently in use.

The existence of a battery of tests would also permit educators to monitor motivational characteristics of students as they progressed through a second language program over a course of years. There is considerable discussion about the effects of the age of the student and his interest in and ability to learn a second language, and although it seems reasonable to argue that motivational variables are obviously implicated (see Gardner, 1962) little systematic attention has been directed toward them. The existence of a standardized measuring instrument of student motivation would allow answers to these questions either from a developmental or cross-sectional approach, and would permit their evaluation in a number of different programs.

Research conducted in Great Britain (Burstall, 1968; 1970a; 1970b; 1972) has demonstrated considerable variability from one region to another in the general level of French competence achieved even in comparable programs. Such differences are, of course, well known to language teachers. The reasons for them can be attributed to many factors, the quality of the program, the quality of the teacher, the abilities of the students, or any number of socioeconomic factors. Burstall reports that these differences tended to covary with the attitude toward learning French of the principal (i.e., Head if one prefers the British terminology) of the school concerned, but although such covariation may have implications for educational planners, the psychological basis is not clear. It seems possible that the attitude of the principal could affect attitudes of school personnel and thus the children, and these attitudes could influence the motivation of the students concerned. Or alternatively, the attitude of the principal could simply reflect those of the community in which the school is situated, and thus those of the parents and consequently the children. The net effect could be the same, differential achievement based on differential student motivation. A battery of tests designed to assess student motivation would permit a greater understanding of the nature of the relationship. Moreover, a modification of these tests would permit one to assess the attitudes in the community (i.e., the parents of the children) (c.f., Gardner, 1960; Feenstra and Gardner, 1968; Smythe and Stennett, 1970). If it were demonstrated that regional differences in French achievement covaried with regional differences in student and community attitudes, both the psychology of second language acquisition and pedagogical practice could be considerably enhanced. This line of reasoning is considerably expanded in Chapter 6 of the present volume.

In summary, a standardized, reliable, and valid battery of motivational indices has many potential uses. It could be used for both prognosis and diagnosis, for assessing the effects of various incentive programs, for comparing students of different ages, or level of training in the language, or for monitoring regional differences in student motivation which might reflect important community attitudes toward the second-language program.

Background: The Theoretical Rationale and Empirical Support for the Attitude/Motivational Tests

The concept of motivation has often been invoked to explain differences in second language achievement, particularly where the language program is constant and students are comparable in language aptitude (c.f., Carroll, 1962).

Despite its importance as an explanatory concept, it is only comparatively recently that theoretical and empirical papers concerned with explicating the role of motivation in second-language acquisition have been written. One of the original treatises on the importance of motivation in second-language acquisition was that of Dunkel (1948), though his findings were somewhat meager, possibly because his conception of motivation was limited solely to a concern of the goals of language acquisition and the amount of effort the student expended. After a number of studies he concluded that motivation had a significant effect on achievement but that nonetheless, the effects were not pronounced. Indications that a more global, attitudinally based, concept of the motivation to learn a second language, was necessary to account for second language achievement appeared slightly later in a number of different sources. In his initial studies of bilingualism, Lambert (1956a; 1956b; 1956c) noted that some instances of superior acquisition of the second language seemed explained only on the basis of the students' emotional identification with the other language community. Nida (1957), furthermore, reported a case history of one student who had difficulty acquiring a second language despite a good language program and an adequate level of language aptitude. He explained this failure in terms of emotional difficulties in incorporating another language which could be traced to the student's early home experience. The first attempt at a theoretical model of motivation to acquire a second language was, however, made by Susan Ervin (1954). Drawing upon the research and theoretical model developed by Mowrer (1950) to explain first language acquisition, Ervin argued that successful second-language acquisition depended upon a willingness on the part of the student to identify with the other language community. Many studies have been conducted dealing with the role of attitudes and motivation in second-language acquisition. To provide a broad overview of this line of research, several of these studies are summarized in Table 1.

Insert Table 1 About Here

The initial studies directly concerned with assessing motivational aspects associated with second-language acquisition which focused on attitudinal characteristics were conducted by Gardner (1958). One of these, published in 1959 (Gardner and Lambert, 1959) served as the model for a number of subsequent studies. In this study, the correlations among one measure of French achievement, a number of attitude and motivation measures and a number of language aptitude indices were factor analyzed. Of the four factors obtained, two shared variance in common with the measure of French achievement. One of these factors defined a language aptitude dimension, the other an attitudinal-motivational dimension. The interpretation of this second factor indicated that the successful acquisition of a second language depended upon "a willingness to be like valued members of the language community" (p. 271). In subsequent discussions (see Gardner, 1966), this dimension has been referred to as an integrative motive".

These results were replicated in a second study (Gardner, 1960) which also employed the factor analytic method but appreciably increased the number of attitude measures and indices of French achievement. Seven factors were obtained, but two of them shared variance in common with the measures of French achievement. In general, these two factors were comparable to the two described above. One of them was defined largely by the three indices of language aptitude included in the study; the other received its dominant loadings from three motivational indices, Motivational Intensity, Desire to Learn French, and an Integrative Orientation. Of the measures of French achievement, aural comprehension and grammar tended to be most highly related to the aptitude dimension whereas bilingual automaticity and accent were more highly related to the integrative motivational dimension. The measures of pronunciation accuracy, reading fluency, and vocabulary were approximately equally related to both dimensions. As in the first study, these results also warranted the conclusion that French achievement was related to two components, language aptitude and an integrative motive, but in this case there is a clear indication that they influence different types of skills. In this study, the parents of the students were also tested. The results demonstrated an association between the parents' attitudes and those of the students. It seemed clear that the integrative motive was fostered by a similar orientation on the part of the parents.

Similar studies of English speaking students learning French have subsequently been conducted in Maine, Louisiana, and Connecticut (Gardner and Lambert, 1972) and in London, Ontario (Feenstra and Gardner, 1968; Smythe, Stennett and Feenstra, 1972). Studies have also investigated Franco-American students learning French (Gardner and Lambert, 1972) and Filipino students learning English (Gardner and Santos, 1970). The results of these studies are consistent with those described above. In each case, it was clear that a motivational component accounted for much of the variability in second language achievement though close inspection of the studies will reveal that correlates of the motivational complex vary somewhat.

All of the studies are consistent in indicating that integratively oriented students evidence a stronger motivation to learn the language than students who are instrumentally oriented, and generally achieve higher. (An integrative orientation reflects an interest in learning the language in order to be able to interact with members of that language group, an instrumental orientation describes an interest in learning the language for more utilitarian reasons such as to get a good job). In many of the studies, this integrative orientation is associated with favourable attitudes toward the other language group (e.g., French Canadians), in some it is associated with feelings of anomie (c.f., Lambert, 1963), a non-ethnocentric orientation, and non-authoritarian attitudes, and/or a heightened interest in foreign languages. Although the attitudinal bases for the integrative motive seem from the above listing to be highly variable, there are many possible reasons. The studies were conducted in very different geographical and cultural areas, the ages of the students varied from study to study, and the students were tested in differing stages of the language acquisition program. Possibly, the more potent variable, however, was that all of these investigations were conducted to study a phenomenon using tests developed largely for that particular study. Although every effort was made to ensure that the tests measured what they were thought to measure, no attention was directed toward test construction, and there was little uniformity in the tests from study to study, even for those bearing similar names.

Studies have also been done using this model to evaluate different types of programs at the university level (Scherer and Wertheimer, 1962; 1964), while others have focused on measuring different aspects of the integrative motive (Randhawa and Korpan, 1973). Attitudinal differences between students who continue their foreign language training and those who choose to drop out have recently been reported by Bartley (1969, 1970). Moreover, an entire research program, referred to as the St. Lambert project (see, Samuels, Reynolds and Lambert, 1969; Lambert, Just and Segalowitz, 1970; Tucker, Lambert, d'Anglejan and Silny, 1971; Lambert, Tucker and d'Anglejan, 1972; Lambert, Tucker, d'Anglejan and Silny, 1972; and Tucker, Lambert, and d'Anglejan, 1972) is concerned with evaluating a bilingual immersion program in the elementary school with at least some attention directed towards evaluating changes among students on characteristics included in the integrative motive. Another major longitudinal project concerned with elementary bilingual education is currently underway in the Ottawa though measures of language aptitude are included in this study. Chapter 4 also presents our first attempt at producing a formula by which to predict second language achievement. Chapter 5 describes the results of two serendipitous studies not originally included in the initial research plan. These studies have taken on profound significance both in our theorizing and future research plans, and have important implications to an endemic problem faced by foreign language teachers throughout North America. The problem we refer to was first labelled by Diana Bartley (1969) as "the foreign language drop-out problem" and it is hoped that the evidence provided in Chapter 5 will offer some insights as to how this trend may either be arrested or possibly even reversed. Chapter 6 also stresses a different orientation to studying the second language learning process and focuses on consensual beliefs (or stereotypes) about important social objects. The potential relevance and influence of such group-endorsed perceptions to the concepts French Canadians, English Canadians, My French Teacher and My French Course on the acquisition of French language skills are the topic of Chapter 6. A fifth concept, My English Course, was included in this phase of the research to serve as another point of reference, a control, and as an aid to interpreting the responses to the concept My French Course. Finally, in Chapter 7 we have attempted to integrate the results, and propose, not an all encompassing theory, but at least a beginning of a model which with subsequent research (some of which is already underway) will optimistically lead toward a theory.

Finally, three appendices are included to provide the reader easy access to information too detailed to fit comfortably into the body of the text. Included in the appendices are all of the test materials used in both the initial study (Chapter 3) and the validation study (Chapter 4).

Separate School System and according to the first reports from this project (Edwards and Casserly, 1971, 1972, 1973) an attempt is to be made to assess some aspects of student attitude. Unfortunately, not much detail is presented in these three, latter reports to determine what attitudes are to be investigated and just how this will be done. All of the above studies share the weakness, however, that the tests employed were developed exclusively for specific projects. This is not meant to denigrate those projects; their focus is on examining a process. The time appeared ripe, however, to establish a uniform battery of tests so that the practical implications of this phenomenon could be more carefully mapped. This is a major aim of the research project described in the present report.

The Plan of the Chapters to Follow

As many of the analyses and statistical results to be presented in subsequent chapters may seem rather complicated and esoteric to persons who have not been subjected to formal courses in the analytic statistical procedures used by social scientists, Chapter 2 offers a brief cram course in experimental design and analysis. An attempt was made to keep the language and concepts as jargon-free and non-technical as possible and it is to be hoped that a leisurely reading of Chapter 2 (for those who deem it necessary) will help to unravel any of the jargon that may have crept into later chapters. Chapter 3 provides a description of the test construction phase of the attitude/motivational test battery and also describes the relationships among the attitude/motivational tests and several measures of French achievement. Also included in Chapter 3 is a preliminary description of developmental changes across five grade levels on the various measuring instruments included in this phase. Chapter 4 attempts to demonstrate the soundness of the measuring instruments developed in Chapter 3 and to validate the major findings and conclusions reported in that chapter, The correlation matrices generated in order to produce the factor analytic solutions of Chapters 3 and 4 are also included as appendices for those readers equipped both with keen enough eyesight and a strong enough compulsion to wish to examine them.

TABLE 1

DESCRIPTION OF STUDIES CONCERNED WITH THE ROLE OF ATTITUDES AND MOTIVATION IN SECOND-LANGUAGE LEARNING

REGION IN WHICH STUDY WAS CONDUCTED	YEAR OF STUDY	SAMPLE SIZE	GRADE LEVEL	PUBLISHED REFERENCE
English-speaking Students Learning French				
Montreal*	1957	75	11	Gardner, R.C. & Lambert, W.E., Motivational Variables in Second-Language Acquisition. *Canadian Journal of Psychology*, 1959, *13*, 266-272.
Montreal*	1959	83	10	Gardner, R.C., Motivational Variables in Second-Language Learning. *International Journal of American Linguistics*, 1966, *32*, 24-44.
Maine	1961	145	9, 10, 11	Gardner, R.C. & Lambert, W.E., *Attitudes and Motivation in Second-Language Learning*. Newbury House, Massachusetts, 1972.
Louisiana	1961	96	9, 10	
Connecticut	1961	142	9, 11	
London, Ontario	1967	153	9	Feenstra, H.J. & Gardner, R.C., Aptitude, Attitude and Motivation in Second-Language Acquisition. Research Bulletin No. 101, University of Western Ontario, 1968.
London, Ontario	1970	171	9	Smythe, P.C. & Stennett, R.G., The effects of oral French training on students' attitudes and linguistic abilities. A preliminary report. Paper presented at the Ontario Educational Research Council Meetings, Toronto, 1970.
London, Ontario	1970	125	9	Smythe, P.C., Stennett, R.G. & Feenstra, H.J., Attitude, Aptitude, and Type of Instructional Program in Second-Language Acquisition. *Canadian Journal of Behavioural Science*, 1972, *4*, 307-21.

TABLE 1 - continued

DESCRIPTION OF STUDIES CONCERNED WITH THE ROLE OF ATTITUDES AND MOTIVATION IN SECOND-LANGUAGE LEARNING

REGION IN WHICH STUDY WAS CONDUCTED	YEAR OF STUDY	SAMPLE SIZE	GRADE LEVEL	PUBLISHED REFERENCE
Franco-American Students Learning French				
Maine	1961	98	9, 10	Gardner, R.C. & Lambert, W.E., *Attitudes and Motivation in Second-Language Learning*. Newbury House, Massachusetts, 1972.
Louisiana	1961	80	9, 10	
Filipino Students Learning English				
Manila, Phillippines*	1968	103	Senior	Gardner, R.C. & Santos, E.H., Motivational Variables in Second-Language Acquisition. A Philippine Investigation Research Bulletin No. 149, University of Western Ontario, 1970.

*These studies are also discussed in Gardner and Lambert's *Attitudes and Motivation in Second-Language Learning*.

CHAPTER 2

PRINCIPLES OF DESIGN AND ANALYSIS RELEVANT TO THE INVESTIGATIONS

The research to be discussed in the following chapters runs the gamut with respect to design considerations and statistical analyses performed. The present chapter is intended to provide a general background for some of the more esoteric statistical analyses applied to some of the data. For readers with some statistical training, this chapter will be unnecessary. For those with little experience with the intricacies of statistics, it is hoped that the brief discussions here will prove sufficiently enlightening to permit them to understand the principles, if not the mathematics, involved. It is not the intent here to provide a treatise of the various statistical techniques, but rather to explain in relatively simple terms the general meaning and usefulness of the techniques used.

In the course of reading the chapters to follow, the reader will come across various statistical techniques such as Analysis of Variance, Factor Analysis, and Multiple Correlation, more general approaches to data reduction such as Item Analyses, and general statistical procedures associated with the concept of reliability. In the sections to follow, each of these will be discussed so that understanding of the various procedures will (hopefully) be improved.

Analysis of Variance

Despite its name, analysis of variance is a technique for determining whether the means for a number of different groups differ more amongst themselves than reasonably can be attributed to chance. For example, consider that you had five grade groupings of students, grades 7, 8, 9, 10, and 11. The numbers of students in each group need not be equal. Suppose, further, that you had given the students in each grade a test measuring Attitudes Toward French Canadians. After scoring the tests, you would be able to compute the mean score for each group. Obviously, you would be surprised if the means for each grade were identical. You would expect them to vary somewhat. On the other hand, you would be surprised if they varied too much, because if they did you would probably conclude that in fact the attitudes of the students in the different grades toward French Canadians were really different. Analysis of variance is a statistical technique which permits one to consider the means from several groups simultaneously and ask the question, "Is it reasonable to expect the means to differ as much as they do if the groups were identical (on the average) with respect to the attribute being measured."

It is not the purpose here to discuss the arithmetic underlying analysis of variance, or the underlying mathematical theory. The logic of the technique, however, begins with a question much like that indicated in the previous paragraph, and asks how likely it would be to obtain means as different as those obtained if in fact the groups "should be identical." To conceptualize what is meant by the phrase "should be identical", consider again the example with respect to the students in the five grades 7, 8, 9, 10, and 11, and their scores on the scale of Attitudes toward French Canadians. It is possible to think of all students who are in grades 7, 8, 9, 10, and 11. These would be referred to as populations. Any particular group of grade 7 students, then, could be considered as a sample from the grade 7 population. That is, each sample of students we have for each grade, can be thought of as a sample from its respective population.

If we were to assume that the various populations had the same attitude toward French Canadians, we would expect that in general the samples we have obtained would also tend to have the same attitude, and that any differences which do exist are due to chance, that is, the luck of the draw. In statistical jargon, this is referred to as the Null Hypothesis. The analysis of variance technique permits one to determine how likely (or probable) it is to obtain means as different as those obtained if in fact the null hypothesis were true. It is this null hypothesis of no difference between the populations which was referred to in the earlier phrase "should be identical." If as a result of the analysis of variance, one determines that one would expect the means to differ as much as they do only 5% (or 1%) of the time if the null hypothesis is true, then it is generally concluded that likely the null hypothesis is not true. That is, one generally concludes that the populations are in fact not equal. When one speaks of a significant effect, of grade for example, one means that the analysis of variance has suggested that the means are more variable than one would expect due to chance, and that consequently the populations are probably different.

One cannot tell simply by looking at the size of the differences among the means whether or not they are due to chance. In the analysis of variance, at least of the type being described here, the sizes of the differences between the means of the different samples, are compared with the sizes of the differences among people in the samples. If the attitudes of the people in a sample differ considerably, than it is reasonable to expect the means of the samples to differ considerably. The analysis of variance makes such a comparison, and it is for this reason that such an analysis is done rather than simply looking at the means of the various groups and deciding that they look quite different.

The preceding discussion refers to the simplest form of analysis of variance. It is possible, however, to have much more complex forms. For example, we might have a situation in which we are interested in comparing the means among say the five grades 7, 8, 9, 10, and 11, but that within each grade we are also interested in determining whether the boys differ from the girls.

That is we are interested in making comparisons between grades but also between the sexes. In the jargon of statistics, this would be referred to as a two factor analysis of variance. In this case, the two factors are grade and sex. The analysis of variance would permit us to ask the questions, "Do the grades differ among themselves?", and also "Are the boys different from the girls?" on the attribute measured. In this case, however, one can also obtain answers to a further question, viz., "Are the differences among the grades for boys different than the differences among the grades for girls?". In this case, we are asking whether grade and sex interact or combine in some unique way, hence the test of this question is sometimes referred to a test of the interaction, in this case between grade and sex. To complete this picture, it should be stated that the last question could also be asked in a different way, viz., "Are the differences between boys and girls at any one grade appreciably different than the differences between boys and girls at any other grade?".

In the case of the three questions asked above, the statistical jargon would state them as, "Is there a significant effect due to grade?", "Is there a significant effect due to sex?", and finally, "Is there a significant interaction between grade and sex?". The analysis of variance provides a probability statement with respect to each of these questions, and if the probability value for any comparison is less than 5%, the general decision made is that the groups do in fact differ with respect to that comparison.

Factor Analysis

Factor analysis is an arithmetically complex, but conceptually simple, technique which permits an investigator to simultaneously investigate the major relationships among a set of variables. In conducting a factor analysis, there are typically three steps to be followed. First, the correlations among all variables are computed. The result is a correlation matrix. This is often referred to as a square matrix because it has as many columns as it does rows, however since it is symmetrical usually only one half of the matrix is presented (as in Table 1 in this chapter). Second, the correlation matrix is factored using techniques derived from matrix algebra. The result of this operation is generally a rectangular matrix with as many rows as the correlation matrix, but considerably fewer columns. This is referred to as a factor matrix. Third, an operation referred to as "rotation" is applied to this matrix in order to produce a matrix which is more parsimoniously interpreted than the factor matrix. The result is another matrix which has the same number of rows and columns as the factor matrix. This is termed a rotated factor matrix.

The major purpose of factor analysis is to provide a means of investigating all the relationships described in a correlation matrix without having to consider simultaneously all the correlations. The rationale depends upon determining hypothetical dimensions which are generally independent of each other, and studying the relationships of each of the variables to these dimensions. If a series of variables are highly related to one dimension, it is reasonable to conclude that they are highly related to each other. Since each dimension is independent (or unrelated) to every other dimension, this permits the investigator to determine the major independent components which account for the correlations among all the variables. For the purposes of communication, an investigator typically attempts to name the various factors (or dimensions) by considering the nature of the variables most highly related to them. The factor names, however, are to a considerable extent arbitrary. Factors gain their meaning from the variables contributing to them, not from the label applied. Hopefully, however, the factor name does describe the general component underlying the variables defining the factor.

In the generation of the factor matrix and the rotated factor matrix, numerous procedures are available to the investigator. It is beyond the scope of this presentation to discuss the nature of these various procedures and the differences among them. In point of fact, the mathematics underlying them can get rather formidable and it is unfortunate that the various books which have been written on the subject require some great deal of appreciation of matrix algebra. One book which is nonetheless highly readable is that by Harman (1967), and though some of the mathematics may be perceived as frightening by some people, a considerable appreciation of the technique is nevertheless possible. Other sources circumvent many of the mathematical conceptions, and by the use of examples explain the major rudiments of the technique. Examples of such sources are Ferguson (1971), Guilford and Fruchter (1973) and Nunally (1967).

At the present time a major technique used to generate a factor matrix from the correlation matrix is the principal axis solution. The name for this technique derives from the fact that the procedure isolates the major axes (or dimensions) which serve to account for the principle clusterings of the variables in a multi-dimensional space. The major underlying notion is that among a set of variables, some are more highly associated with some than with others. That is, the variables can be grouped together into clusters in terms of their major components. This is achieved by means of a fairly straightforward mathematical operation. Generally, however, the various dimensions isolated in this manner, though mathematically unique, place emphasis on dimensions in terms of their ability to account for, or explain the general correlations among all the variables. As such, the presence or absence of any given variable can have a considerable influence on the numbers (or factor loadings) which appear in the factor matrix. To circumvent this problem, the technique of rotation is applied to the factor matrix. The notion underlying rotation is to focus on those relatively small clusters of variables which are more highly related to each other, and to shift the axes (dimensions) so that they pass closer to these clusters and are less influenced by other variables which are not close to the clusters. Because of this, the presence or absence of a particular variable does not materially influence the solution. The most common rotational technique used today is that developed by Kaiser (1958) and is referred to as the Varimax solution. This procedure is also a fairly straight-forward arithmetical one which serves to identify various clusters of variables with the restriction that the dimensions identified are independent of each other (i.e., the dimensions are uncorrelated). As a result, the investigator is able to discuss the resulting dimensions as independent components.

It must be emphasized that the factor matrix and the rotated factor matrix both summarize the major relationships which occur in the correlation matrix. This can be determined to the readers satisfaction by considering the fictitious data in Tables 1, 2 and 3. Table 1 presents the correlation matrix for five variables. Table 2 is the factor matrix obtained by performing a principal axis solution to the correlation matrix. (For the non-initiate, it should be stated that the highest absolute correlation for each variable served as its communality estimate). Table 3 presents the rotated matrix derived from the Varimax (Kaiser, 1958) solution.

Insert Tables 1, 2, and 3 About Here

Inspection of the correlation matrix will reveal a fairly clear pattern in the relationships. Variables 1, 2, and 3 (Intelligence, Language Aptitude and French Achievement) tend to be highly correlated among each other. Highly correlated in this instance might be taken to refer to any correlation greater than ±.30). Similarly, Variables 4 and 5 (Attitudes toward French Canadians and Motivational Intensity) tend to be highly correlated with each other and with Variable 3, though they are not highly related to Variables 1 and 2. This pattern suggests two general clusterings with Variables 1 and 2 forming one cluster and Variables 4 and 5 forming the other. Variable 3 tends to be related to both of these small clusterings. Since the first cluster is comprised of the measures of intelligence and language aptitude, it could be interpreted as suggesting that these two tests both tap cognitive skills, or a general verbal ability. Furthermore, since the second cluster is composed of the two measures, Attitudes toward French Canadians and Motivational Intensity, it would suggest that those individuals with favourable attitudes toward French Canadians tend to expend considerable effort in attempting to learn French. Such a configuration might be interpreted as reflecting a motivation toward learning French. That the variables in each cluster tend not to correlate appreciably with the variables in the other cluster would suggest that differences in verbal skills are unrelated to differences in motivation. The measure of French Achievement, however, is related to the two independent clusters, suggesting that individual differences in French achievement tend to be related on the one hand to individual differences in verbal ability, and on the other to individual differences in motivation. That is, such results indicate that an individual's French knowledge is related to two characteristics, verbal ability and motivation. Perhaps it should be emphasized again that this example is fictitious; it does serve as a preview, however, of things to come!

Although the above interpretation follows fairly directly and simply from inspection of the correlation matrix, it can sometimes take considerable time to consider all the possible combinations of variables. In the present example there were only five variables, and consequently only 10 correlations. (Incidentally, if there are N variables, there will be $\frac{N(N-1)}{2}$ correlations). But consider the labour and time involved if there were say 40 variables (that's 780 correlations!).

The technique of factor analysis simply makes the task of interpreting the correlation matrix an easier one. As already stated, when conducting a factor analysis, one typically first obtains the Principal Axis solution and then the Rotated Matrix. Although it is perfectly reasonable and meaningful to interpret the Principal Axis factor matrix (see Table 2), it is generally recognized that the interpretation is not as parsimonious as that provided by the Rotated Factor Matrix. In a later paragraph, brief mention will be made of the interpretation of the Principal Axis factor matrix, but first it will be clearer if attention is directed toward the Rotated Factor matrix.

In interpreting any factor matrix, the aim is to determine what is common to each of the variables which receive high factor loadings (i.e., numbers) on a particular factor, and what distinguishes them from variables which receive low loadings on that factor. Each factor is interpreted one at a time, and independently of the other factors. Also, of course, some decision has to be made as to what constitutes a "high factor loading". In arriving at this decision, the focus is on the magnitude of the factor loading and not its sign, because the sign merely indicates the direction of the relationship. In many studies, a high factor loading is taken to mean any factor loading for which the absolute value is greater than .30. This, however, assumes that the number of individuals on which the correlations are computed is approximately 100 or more. Since this is true of all the factor matrices referred to in this book, we shall not discuss the logic of this any further, and simply accept the value of ±.30 as indicating a substantial relationship.

Turning then to the Rotated Factor Matrix (see Table 3) we can inspect the factor loadings on Factor I (the first column of numbers). It will be noted that three variables receive factor loadings greater than 0.30. These are Variables 1, 2, and 3, Intelligence, Language Aptitude, and French Achievement, respectively. What do these three variables have in common? We might conclude that differences in amount of knowledge of French characterizes these three measures, but this would not make sense since many highly intelligent people may in fact have no knowledge of French. If, however, we were to interpret the common element as Cognitive Skills, Verbal Ability, Intelligence or Language Aptitude, it would be more meaningful in that its sensible to interpret individual differences on Variables 1, 2, and 3 as reflecting any one of these. Furthermore, it is also meaningful to consider that such individual differences need not necessarily be related to differences in Variables 4 and 5. Also, given the limited information provided by the five variables any one of the four definitions of the common element underlying Factor I is equally likely. The label applied is to some extent arbitrary unless other variables could be introduced which would permit further clarification. That is, with such results, Factor I could be interpreted as describing a dimension of Cognitive Skills, Verbal Ability, Intelligence or Language Aptitude. Whichever label one prefers does not change the fact that the dimension is defined in terms of Variables 1, 2, and 3, and that the common element focuses on Verbal skills. In this book, preference will be given to the label, Language Aptitude, for such a configuration because it is parsimonious to refer to such verbal skills as reflecting an aptitude for languages.

Factor II is also defined by three variables with factor loadings greater than .30. These are, however, Variables 3, 4, and 5 (French Achievement, Attitudes toward French Canadians, and Motivational Intensity). Again, we might wish to refer to the common element as French Achievement, but we could easily think of individuals with favourable attitudes toward French Canadians or with a high motivational intensity to learn French who know no French. (They may have had no opportunity to experience the French language). If, however, we focus our attention on Variables 4 and 5 we would conclude that individuals with favourable attitudes toward French Canadians demonstrate a high level of motivation to learn French (by virtue of the fact that the two variables have high loadings on this factor). We might conclude, therefore, that the major common element depicted by this factor is an Attitudinal or Motivational one. In fact, later on when we obtain a similar configuration we will refer to this as an Integrative Motive factor because the implication is that the individual highly motivated to learn French has favourable attitudes toward French Canadians and thus is indicating an interest in learning French because of an interest in the French Canadian community. That the measure of French Achievement contributes substantially to this dimension suggests that individual differences in French Achievement are related to individual differences in something which might be called an Integrative Motive. Although again, some might disagree with the label applied it does not change the fact that these three variables define this dimension. It will be noted, further, that Variables 1 and 2 do not contribute to this dimension indicating that individual differences in intelligence and language aptitude are unrelated to individual differences in the Integrative Motive.

The interpretation of the Rotated Factor matrix, therefore, indicates that there are two fairly independent clusters of variables. One cluster is made up of Variables 1 and 2, the other of Variables 4 and 5. Furthermore Variable 3 is related to both clusters. That is, French Achievement is related on the one hand to Language Aptitude and on the other to the Integrative Motive. This conforms, of course to the interpretation which we already made when considering the Correlation Matrix directly.

The rotated factor matrix will always reflect what is contained in the correlation matrix because it is derived directly from it. In fact, given any factor matrix, one can within rounding error always reproduce the correlation matrix. The following formula indicates how one can in fact reproduce the correlation matrix. That is:

$$r_{ij} = \sum_{k=1}^{m} a_{ik} \; a_{jk}$$

where: r_{ij} is the correlation between variables i and j.

$\sum_{k=1}^{m}$ indicates the summation over all the factors from k=1 to k=m.

a_{ik} is the factor loading of variable i on factor k.

a_{jk} is the factor loading of variable j on factor k.

To demonstrate the use of this formula consider the factor loadings of variables 1 and 3 from the Rotated Factor matrix. Inserting their values in the above equation would yield:

$$\begin{aligned} r_{13} &= (.79)\ (.50) + (.19)\ (.57) \\ &= .3950 + .1083 \\ &= .5033 \end{aligned}$$

It will be noted that this value of .50 is very close to the actual correlation of .52 given for Variables 1 and 3 in the Correlation Matrix. All the remaining correlations can be reproduced in the same manner. Thus, it is obvious that the Rotated Factor Matrix describes all the relationships summarized in the Correlation Matrix.

Earlier it was stated that the Principal Axis Factor Matrix, if interpreted would produce an interpretation which also coincides with the relationships summarized in the Correlation Matrix. Although an extensive interpretation will not be made here, inspection of the factor loadings in Table 2 will reveal very comparable patterns to those already discussed. Factor I obtains high loadings from all five variables, and the measure of French Achievement obtains the highest loading. The implication is that the measure of French Achievement shares something in common with all the other measures (an observation which has already been made twice before). On Factor II, however, it will be noted that Variables 1 and 2 receive high negative loadings whereas Variables 4 and 5 have high positive loadings. The implication, then, is that Variables 1 and 2 are quite distinct from Variables 4 and 5. In fact, when their common correlations with French Achievement, as indicated on Factor I, are removed the two sets of variables tend to be negatively related to each other. In short although both clusters of variables tend to be distinct, they nonetheless have a common correlation with French Achievement. This, of course, is the same interpretation arrived at from a consideration of the Rotated Factor Matrix and also the Correlation Matrix. The reader might further satisfy himself that application of the formula presented earlier to these factor loadings also tends to reproduce the correlation matrix.

Multiple Correlation

Multiple correlation is a simple extension of the correlation model, but is generally used when interest is focused on determining the best way of weighting a series of variables to provide the best prediction of a criterion. Assume, for example that an investigator had obtained measures from a group of students on Intelligence, Language Aptitude, Attitudes Toward French Canadians and Motivational Intensity and later on had obtained a measure of French Achievement. He might wish to determine the best weights for each of the predictor variables which would provide the highest correlation between the weighted sum of these variables and scores on the French Achievement measure. In addition to providing the investigator with the best possible prediction of French

Achievement, this technique also indicates the relative importance of each of the predictors. Those predictors with the greatest weights (referred to as beta weights) are the most important for prediction.

In order to gain some understanding of the meaning underlying the beta weights assume that they were .10, .40, .30, and .40 for the variables Intelligence, Language Aptitude, Attitudes Toward French Canadians, and Motivational Intensity, respectively. This would mean that considering only these four predictors as a group, Language Aptitude and Motivational Intensity are of greater importance than the other two variables for prediction and that Attitudes Toward French Canadians is more important for prediction than Intelligence. It must be emphasized that the importance to prediction referred to above is only relative with respect to the variables listed. The addition of another variable could considerably influence the magnitude of the beta weights. Furthermore, the relative importance is indicated by the square of the beta weights rather than the beta weights themselves. In our example, Language Aptitude is $(.40)^2/(.10)^2$ or 16 times (!) more important in prediction than Intelligence, at least given the four predictors.

Multiple correlation is often used in this sense. There is, however, a more potent extension of this concept. Assume, for example, that one wanted to determine the best predictors from among 20 that one had administered to a group. It seems reasonable to expect that many of these variables would be correlated among themselves, and that virtually as good prediction could be obtained by considering only a small set of the variables. Multiple correlation could be used as a technique to determine the weightings of all 20 variables so that their relative importance for prediction could be determined. However, a variant of this technique, Stepwise Regression, (see Nie, Bent and Hull, 1970) provides a means of actually selecting those tests which give the best prediction without having to compute the weights of all possible variables. This procedure is to be preferred over the pure Multiple Correlation method since it considers each variable as it contributes to prediction, and allows the investigator to determine the relative weighting of the variables after the best of some given number have been selected. This indicates, therefore, not only the best predictors but also their relative importance for prediction.

Item Analyses and Estimates of Reliability

In the construction of any test, it is strongly advised that a researcher examine carefully the items comprising that test. At one level, this is done in the very beginning when the researcher carefully considers the wording and content of each item. Thus, for example, if you were interested in developing a test of Attitudes Toward French Canadians, having decided on the format of the test you would spend considerable time writing and rewriting items in order to ensure that they were grammatically correct and that they sampled the item domain of interest. This is so obvious that it is seldom written about in books describing the principles of test construction. But in writing items for an attitude scale, immediate attention is directed toward the grammatical correctness of the items as well as their "face validity" (i.e., their relevance to the attitude being assessed). One would not include in a scale of Attitudes Toward French Canadians an item such as "The undying faith of French Canadians in their religious beliefs are a positive force in this modern world" because it is grammatically incorrect. Similarly, one would obviously not include an item like "Canadian Indians are warmhearted people" in a scale of Attitudes Toward French Canadians because such an item is not relevant to the domain of attitudes toward French Canadians. This concern for structure and content is important, however, there are many other factors which should also be considered in developing a test. If an attitude scale is constructed with only a concern for grammatical correctness and face validity, it is doubtful that it will have much value.

In developing a test, it is also important that the researcher pay close attention to the statistical characteristics of the test. Two important related characteristics that can easily be studied are the relationships between responses to an item and scores on the total scales (referred to as item-total correlations), and the internal consistency reliability of the test (most meaningfully assessed by means of the Kuder-Richardson reliability estimate).

Item-total Correlations

Assume that one wanted to develop a measure of Attitudes Toward French Canadians. The most appropriate procedure to follow in this respect is to identify the response mode to be used, to write items which are grammatically correct and have face validity, and to present these to a representative sample of individuals. To ensure that the final test is a good measure of Attitudes Toward French Canadians it is advisable to initially pretest more items than that actually needed. For example, if one wanted to develop a 10 item test, it is strongly advised that the initial pool consist of more than 10 items. How many more will depend upon the number of meaningful items that can be written and the time available to administer them to the sample of individuals. Within limits, the more items in the original pool, the better.

Having presented a number of items to a sample of subjects, a first step in deciding on the "best" items is to investigate how each item correlates with the total score on the test. Although this might sound somewhat like a "boot-strap" operation, the logic is reasonably simple. First, it is assumed that the total score of all the items is an index of what the test is proposed to measure. Such an assumption is reasonable if one has paid close attention to the face validity of the items. If then, an item is a good one in that in and of itself it indexes what the total test measures, it should correlate highly with a score derived from the sum of all the items. If it does not correlate highly, then it follows that it is not measuring the same thing that all the other items are measuring. In effect, this is an empirical test of the item's face validity. In this sense then, an item is defined as a good one if it correlates highly with the total score, and it is this aspect of the logic which is seen by some as a bootstrap operation. Looked at from another point of view, however, the logic is sound. Assuming that the items all have some component of face validity, it seems reasonable to argue that a score based on all the items will provide a better measure of the phenomenon under investigation than a score derived from only one item even if a few of the items are of questionable value. Parenthetically, it might be stated, even though it is obvious, that scores derived from a single item are of very little value since many factors can influence responses to a single item. Those items which correlate highest with this total score then will be the best indices of the phenomenon in question, and the items discarded as a result of this type of analysis will tend to be the poorer ones.

There is one small flaw in the logic to this point. If one correlates scores on an item with a total score which includes in it that item itself, the correlation will tend to be spuriously high. It is necessary, therefore to compute the item-total correlations such that the item score does not contribute to the total score. This could be a major operation if one were to perform all of these computations at the level of the raw scores. If, however, one computed the item-total correlations as described above, the corrected correlations can be calculated directly using the following formula:

$$r_{i(T-i)} = \frac{r_{iT} S_T - S_i}{\sqrt{S_T^2 + S_i^2 - 2r_{iT} S_i S_T}}$$

where: $r_{i(T-i)}$ = the correlation of item i with the sum of all the remaining items in the subtest

r_{iT} = the correlation of item i with the sum of all the items in the subtest including item i.

S_T = the standard deviation of the total scores obtained by considering all items. The value S_T^2 is the square of this number and is referred to as the variance of the total scores.

S_i = the standard deviation of the item scores. The value, S_i^2 is the variance of the item scores.

It should be noted that this formula assumes that r_{iT} is a positive value. If r_{iT} were negative, the above formula can still be used, except that in the computations, r_{iT} would be treated as a positive value, and the sign of the result changed.

The solutions of the above formula are sometimes referred to as corrected or adjusted correlations but it should be made clear that the results would be the same if for each item one were to obtain total scores derived from the remaining items and calculate the correlations directly. That is, for each item, the value calculated is the correlation of that item with the sum of all the remaining items in the subtest. A high correlation then indicates that the item measures essentially the same thing as the sum of all the remaining items.

It often happens that an investigator is concerned with constructing a number of subtests simultaneously. Consider for example, that you had made up three subtests, Attitudes Toward French Canadians, Attitudes Toward Learning French, and Attitudes Toward European French People. Assume further that you had constructed 15 items for each of these subtests, but that in each case you wanted the best 10 items. Following the logic described above you would score each of the subtests taking care that you keyed each item correctly. For each item you could correlate scores on that item with each of the three sets of total scores. Let us assume that the item in question was one of the items from the subscale of Attitudes Toward French Canadians. The three correlations that you computed would be the correlations of that item with respectively total scores on the subtests, Attitudes Toward French Canadians, Attitudes Toward Learning French, and Attitudes Toward European French People. One of these correlations, that with Attitudes Toward French Canadians, would, however, be spuriously high and would have to be adjusted using the formula described above. When deciding whether to retain or discard this item then the first decision would be made depending upon how this adjusted correlation compares with the adjusted correlations of all the other items making up the subtest of Attitudes Toward French Canadians. If it was among the highest 10 correlations, the inclination would be to retain the item. However, if it is truly a good item for assessing Attitudes Toward French Canadians, one should expect further that it would correlate higher with its own subtest than with the other two subtests. This introduces another decision in the process, namely that in addition to having one of the 10 highest adjusted correlations among the 15 items measuring Attitudes Toward French Canadians, its adjusted correlation should be greater than its correlation with the other subtests. If this is not the case, the item should be considered suspect.

It should be clear from the above that the decisions involved in selecting the best items for a subtest are not hard and fast. There are decision rules to follow, but they must be tempered by rational judgment and intuition. The general rule is easy to state. That is, a good item is one that has a high correlation with the sum of the remaining items in its test (i.e., the adjusted correlation), and a relatively low correlation with other subtests. Achieving this end involves a great deal of care. One must consider the correlations obtained carefully, and at times apply a great deal of intuition. The end result, however, will be a relatively homogeneous test of attitudes of the phenomenon of interest.

Reliability

The notion of reliability refers to the absence of error in the measurement of a particular construct, such as, for example, Attitudes Toward French Canadians. There are many ways of assessing reliability and anyone concerned with test construction should be familiar with the various intricacies of the construct and the ways of assessing it. Some very good references are Ferguson (1971), Guilford and Fruchter (1973), and McNemar (1969). Two aspects of reliability will be considered here. They are Internal Consistency Reliability and Test-Retest Reliability.

Internal Consistency Reliability

If reliability is viewed as the absence of error in the measurement of a construct at a particular point in time, the focus is on how well the various items in a subtest agree in their assessment of the construct. Since error is always assumed to be random, the finding that various items agree in their assessment of a construct implies that there is relatively little error in the assessment.

One procedure used to assess the internal consistency reliability of a subtest is the Kuder-Richardson (K-R) formula. There are various K-R formulae, but the general formula can be written as:

$$\text{Reliability} = \frac{n}{n-1}\left(\frac{S_T^2 - \sum_{i=1}^{n} S_i^2}{S_T^2}\right)$$

where:

n = the number of items in the subtest

S_T^2 = the variance of the total scores

$\sum_{i=1}^{n} S_i^2$ = the sum over the n items of the item variances.

The logic underlying the derivation of this formula is too complex to discuss here. Nonetheless some appreciation of the formula is possible. The value, S_T^2, although a single number, contains within it the sum of the item variances as well as something akin to the sum of all the correlations among the items. If these correlations are all positive and high S_T^2 will be considerably greater than $\sum_{i=1}^{n} S_i^2$. If, however, the item correlations were all low, S_T^2 will be very similar to $\sum_{i=1}^{n} S_i^2$. In the limiting case, if the inter-item correlations were all zero, S_T^2 would equal $\sum_{i=1}^{n} S_i^2$ and the Reliability would be zero. Hence, the higher the correlations among all the items, the higher will be the coefficient of reliability as measured by the K-R formula. The factor, $\frac{n}{n-1}$, may confuse some readers. Suffice it to say that this adjustment is necessary since $\sum_{i=1}^{n} S_i^2$ could never equal zero, so that the term $\frac{S_T^2 - \sum_{i=1}^{n} S_i^2}{S_T^2}$ could not equal 1, hence without the $\frac{n}{n-1}$ factor, Reliability could not equal 1 which would index perfect reliability.

It should also be noted in passing that the above formula could result in a negative reliability coefficient. Such a value is, however, impossible in theory since reliability must always vary from 0 (no reliability) to 1 (perfect reliability). If a negative reliability coefficient were obtained from the K-R formula, it would indicate no reliability (i.e., the value would be taken as zero). Computationally this would result if the correlations among the items tended to be negative. This, of course, would however indicate that the test is not, in fact, reliable from an internal consistency point of view.

Test-Retest Reliability

Another way of viewing reliability, and one which is more meaningful to most people, is that a test tends to give the same assessment for individuals on two different occasions. This, of course, assumes that what you are measuring is not changing over time. To index Test-Retest Reliability, one simply correlates scores on the first testing with scores on the second testing. If the phenomenon doesn't change over time, the test would be reliable if the test tended to order individuals in the same manner on the two testings. Of course, if individuals actually changed on the attribute over the two testings, this measure of reliability would not make sense. However, if people are not changing on the attribute in question, a high Test-Retest Reliability Coefficient would indicate that the rest is reliable.

When computing Test-Retest Reliability, therefore, an investigator should obtain his two measures close enough in time to ensure that no true change has taken place. On the other hand, he must guard against the possibility that individuals may remember on the second occasion how they responded the first time. Again, therefore the investigator is faced with another decision. He must make the time period between testings long enough to eliminate memory effects, but short enough to rule out any true changes in the attributes being measured. This is particularly important when the phenomena being measured are attitudinal attributes.

As stated in the initial paragraph of this chapter, the intent here was to provide a general overview of the more complex statistical techniques used in the research to follow. It was not the aim to present all the intricacies of the various techniques. Anyone sophisticated in statistical methodology will recognize that many of the issues may be somewhat oversimplified. Such was necessary, however, to provide a general overview of the techniques and their applicability to the research problems under investigation. In the chapters to follow, the statistics used are presented on the assumption that the reader has grasped the major points made here. Emphasis, is then placed on what the statistics mean with respect to the phenomenon under investigation. Where a particular statistical assumption is necessary, or where a particular interpretation is made which requires further statistical considerations, these are elaborated in greater detail. The major aim, however, in the subsequent chapters is to focus on the psychological or pedagogical implications of the findings and not a mass of statistics.

TABLE 1

CORRELATION MATRIX INVOLVING FIVE VARIABLES
(Note: The Data are Fictitious)

		1	2	3	4	5
1.	Intelligence	X	.62	.52	.08	.24
2.	Language Aptitude		X	.34	-.16	.00
3.	French Achievement			X	.43	.53
4.	Attitudes toward French Canadians				X	.63
5.	Motivational Intensity					X

TABLE 2

PRINCIPAL AXIS FACTOR MATRIX

		I	II
1.	Intelligence	.65	-.48
2.	Language Aptitude	.44	-.68
3.	French Achievement	.76	-.01
4.	Attitudes toward French Canadians	.55	.58
5.	Motivational Intensity	.68	.43

TABLE 3

ROTATED FACTOR MATRIX

		I	II
1.	Intelligence	.79	.19
2.	Language Aptitude	.80	-.11
3.	French Achievement	.50	.57
4.	Attitudes toward French Canadians	-.09	.80
5.	Motivational Intensity	.12	.80

CHAPTER 3

ATTITUDES, MOTIVATION AND FRENCH ACHIEVEMENT: THE INITIAL STUDY

Introduction

A major purpose of this project was to investigate the relationships among the various attitude measures and their relation to French achievement at several grade levels. By focusing on students at different grade levels within the same geographical region, it seems feasible to determine whether there is any meaningful change in the pattern of relationships at different age levels and stages of second-language acquisition. The previous literature (see Gardner and Lambert, 1972) makes it obvious that although the integrative motive is related to second-language achievement, the pattern of relationships is by no means consistent from study to study. Disentangling the causes of the variations in results is not easy, however, since all of the studies differ with respect to some combination of the age of the students, the tests used, the variables sampled, the relative amount of second-language training of the students, and geographical and cultural characteristics. The present investigation, however, was conducted in one geographical and cultural region, and the attitudinal measures were constant over the grade levels sampled. Some variation was necessary in the measures of French achievement because, as is true of any language curriculum, the second language skills stressed vary from grade to grade. Nonetheless, this project provided more control than previous ones in that the pattern of relationships can be tied directly to the grade under investigation.

The initial study had three major objectives. First, it was deemed necessary to develop tests with known item characteristics and which had high internal consistency. A troublesome aspect of the previous research was the haunting worry that some of the tests might be so heterogeneous in content that they might be measuring a hodgepodge of characteristics rather than the one implied by the name of the test. Such measuring instruments could have validity in that they would correlate meaningfully with other measures, but the interpretation of the correlations might not be as straightforward as suggested in the reports. This worry could not be reduced by searching the articles for reliability information because such information was never reported. This is not meant as a strong criticism of the previous research. The earlier studies were attempting to determine whether a phenomenon existed. And this they did, clearly and convincingly. For progress to continue, however, and for extended hypotheses to be researched, attention must now be directed toward cleaning up these details. The first objective of this initial study, therefore, was to develop tests which were homogeneous in content, as indicated by high internal reliability coefficients, and which at the same time were appropriate to a wide age-range of students.

A second objective of this initial study was to investigate the factor structure at each grade level, 7 through 11, among the measures of attitude, motivation and French achievement. This type of analysis characterizes the majority of the previous studies done in this area, but differs in the important respect that the relationships are examined for each grade level separately. In this manner, possible changes in the relationships among the variables associated with age and exposure to the second language can be detected.

A third objective of this first study was to investigate differences in mean performance on the various tests over the five grade levels, 7 through 11. Such comparisons have considerable potential in indicating the differing natures of students at different stages of the second language program. They are, however, also fraught with dangers with respect to their meaning. Students in these differing grades differ in age, exposure to the language, test-wiseness, as well as a host of other variables, hence the explanation of any differences must be, at best, tentative. It seems, nonetheless, worth the gamble to present the results and offer provisional explanations or hypotheses which future researchers can explore and teachers can evaluate from their own perspective.

Each of the three objectives of the initial study, test development, factor analytic structures, and grade comparisons are to be presented in this chapter. The following section, describes in detail the general procedure, the nature of the subjects sampled, and the tests used. In the Results and Discussion section, the results pertaining to the three major objectives will be discussed in considerable detail.

METHOD

Subjects

The subjects (Ss) for this phase of the investigation were students taking French as a second language in grades 7 to 11 in the London Public School System. The students in grades 7 and 8 were from two elementary schools in the London area. One of these schools was situated in a suburban region while the other was more centrally located. The students in grades 9 and 10 were from one large suburban secondary school, while the students from grade 11 were drawn from the same school as well as from one other secondary school in another suburb of the city. The four schools were used on the advice of the Measurement and Evaluation Division of the London Board of Education because they were relatively representative of the student body in London.

The entire sample was comprised of 119 students in grade 7, 123 in grade 8, 116 in grade 9, 92 in grade 10 and 102 in grade 11.

Materials

The materials for this investigation consisted of a number of paper and pencil measures of attitudinal and motivational characteristics, stereotypes about and attitudes toward various ethnic groups, school courses, and teachers, and French achievement. Because of the different levels of French achievement across the various grades, the indices of French achievement used for the different grades had to be varied somewhat. These differences are indicated below. All the other measures, however, were common to the five grades. Following is a list of the variables assessed in this investigation.

1. Attitudes Toward French Canadians. This variable was assessed by means of 30 positively worded items about French Canadians (see Appendix A, page A - 3).[1] The items were written specifically for this investigation or adapted from other sources (Gardner and Lambert, 1959; Kirby and Gardner, 1973). A high score on this measure indicates a positive attitude toward French Canadians.

2. French Class Anxiety. This test consisted of 11 items which referred to feelings of discomfort or anxiety associated with speaking French, or participating in the French Class (see Appendix A, page A - 5). The items were written specifically for this investigation. A high score reflects anxiety aroused in the French class.

3. Attitudes Toward Learning French. This test consisted of 14 items adapted from another study (Rhandawa and Korpan, 1972). Seven of the items expressed favourable attitudes, while seven were negatively worded (see Appendix A, page A - 6). A high score on this test is indicative of a favourable attitude toward learning French.

4. General Classroom Anxiety. Ten items referring to feelings of anxiety or discomfort associated with responding in the general classroom situation were presented (see Appendix A, page A - 7). The items were developed specifically

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[1] Items with an asterisk refer to those items used in the Validation Study (Chapter 4).

for this investigation; a high score is indicative of feelings of anxiety in the classroom.

5. Ethnocentrism (E-Scale). This scale (see Appendix A, page A - 8) consisted of 15 items derived from the Other Minorities and Patriotism subscale (Adorno, et al., 1950) and the Children's Ethnocentrism scale (Frenkel-Brunswick, 1948). A high score reflects feelings of ethnocentrism, the belief that one's own cultural community is superior to other cultural groups.

6. Attitudes Toward European French People. This test, developed for this investigation, consisted of 30 positively evaluative statements about European French people (see Appendix A, page A - 9). A high score on this test indicates favourable attitudes toward the European French.

7. Need Achievement. This test was adapted from items developed by Jackson (1965). It consisted of 14 items designed to indicate how hard an individual strives for perfection or excellence in any task he undertakes (see Appendix A, page A - 11). Seven of the items were worded positively in that they stressed an interest in performing tasks with considerable care and perfection; the other seven items were negatively worded in that they stressed completing tasks quickly with a minimum of effort or concern for quality. A high score reflects a high need for achievement.

8. Authoritarianism (F-Scale). This 12 item scale was adapted from the California F-Scale (Adorno, et al., 1950), and assesses a generalized predisposition toward prejudice toward outgroups (see Appendix A, page A - 12). The scale is scored such that high scores reflect an authoritarian ideology.

9. Interest in Foreign Languages. This test (see Appendix A, page A - 13) consisted of 11 items reflecting an interest in learning or knowing "foreign languages". Items were written especially for this investigation or adapted from Feenstra and Gardner (1968) and made reference to foreign languages in

general rather than any specific language. A high score indicates an interest in Foreign Languages.

10. Machiavellianism. This measure consisted of 15 items adapted from Christie and Geis (1970) which assesses the extent to which an individual expresses an interest in manipulating or exploiting others for personal gain (see Appendix A, page A - 14). Eight items involved manipulative content, while seven items were negatively worded. A high score on this test reflects a high degree of interest in exploiting others.

11. Parental Encouragement. This scale consisted of 12 items referring to the extent that the student perceived his parents as actively encouraging him to learn French (see Appendix A, page A - 15). The items were written specifically for this investigation, but attention was directed toward similar indices used in other studies (Feenstra and Gardner, 1968; Gardner, and Lambert, 1972). A high score is indicative of a student's perception that his parents actively encourage him to learn French.

12. Anomie. This test assesses potential dissatisfaction with one's own cultural community. Ten items, each expressing such dissatisfaction were presented (see Appendix A, page A - 16). Five of the items were adapted from Srole (1951), and five were adapted from Gardner and Lambert (1972). The higher the score, the greater the feelings of anomie.

13. Ratings of Instrumental Orientation. Ss were presented with eight items each stressing the pragmatic or utilitarian value of learning French (see Appendix A, page A - 17). The items were written for this study but were adapted from Gardner and Lambert (1972). A high score indicates that Ss perceive utilitarian reasons for studying French as appropriate to their own feelings.

14. Ratings of Integrative Orientation. This scale consisted of eight items each emphasizing the importance of learning French to afford Ss the opportunity to interact with and share cultural experiences with members of the French speaking community (see Appendix A, page A - 18). The items were adapted from Gardner and Lambert (1972) or specifically written for this investigation. A high score indicates that Ss perceive integrative reasons for studying French as relevant to their own feelings.

15. Motivational Intensity. This test consisted of 19 multiple choice items designed to assess the amount of effort students felt that they expended in learning French (see Appendix A, page A - 20). Items were adapted from Feenstra and Gardner (1968), Gardner (1960), and Gardner and Lambert (1959; 1972), but many additional items were written for this investigation. A high score represents Ss' self-report of a high degree of effort expended in acquiring French.

16. Desire to Learn French. This scale consisted of 18 multiple-choice items designed to assess how much the student wants to learn French independent of the amount of effort involved (see Appendix A, page A - 23). The test was based on scales used by Feenstra and Gardner (1968), Gardner (1960), and Gardner and Lambert (1959; 1972), but many additional items were developed for this investigation. High scores on this test reflect a strong desire to learn French.

17. Orientation Index. This measure (see Appendix A, page A - 26) was adapted from Gardner and Lambert (1959), and provides an index of whether the individual is primarily integrative or instrumental in his orientation toward French language study. In this test, the student is asked to select from among four reasons for studying French the one most characteristic of him. He is also provided with the opportunity to write in one further reason which he can then select. Two of the reasons provided indicate an integrative orientation, two an instrumental

orientation. A student is classified as either integratively or instrumentally oriented depending upon the alternative chosen. If a student choose the reason he wrote in, it is either classified in one of the two categories, or if a decision cannot be reached the test is not scored. For numerical purposes, an instrumental orientation is coded 1, an integrative orientation, 2.

Variables 18 to 22 were measures derived from semantic differential (Osgood, et al., 1958) ratings of seven concepts, Canadian Indians, English Canadians, French Canadians, European French people, My French Course, My French Teacher, and My English Course. Not all concepts were rated on the same scales, and not all concepts were included in the major data analyses. The semantic differential technique was employed because it can be used for a number of purposes. One purpose is to obtain evaluative reactions to the concepts, and it is this measure which is emphasized in this section. The semantic differential can also be used, however, to index the stereotypes that Ss have about particular concepts. Considerable research has made use of the semantic differential format to assess stereotypes about ethnic groups (Gardner, Wonnacott and Taylor, 1968; Gardner, Taylor and Feenstra, 1970; Gardner, Kirby, Gorospe and Villamin, 1972, Gardner and Kirby, 1973; Kirby and Gardner, 1973). This research defines the stereotype about an ethnic group in terms of consensus in ascribing attributes to that group, and assesses such consensus in terms of the extent to which Ss' ratings are polarized on the various scales. Use of these data in that context is described in subsequent chapters.

In the list of variables to follow only ratings on five concepts are considered, and the emphasis is on evaluative reactions.

18. English Canadians (evaluation). Ss rated the concept, English Canadians, on 30 sematic differential scales (see Appendix A, page A - 30). Eight of

these scales were classified as evaluative based on the norms presented by Kirby and Gardner (1972). To be considered evaluative, a scale had to consist of two trait descriptive adjectives varying on evaluation as defined by the Kirby and Gardner (1972) norms. A scale was considered as evaluative if one of the trait descriptive adjectives was above the 20th percentile while its opposite was below the 80th percentile on the norms of evaluation and both attributes were relatively low (in the bottom 70%) on behavioural specificity. Using these criteria, the eight scales intelligent-stupid, dependable-undependable, reliable-unreliable, honest-dishonest, pleasant-unpleasant, trustworthy-untrustworthy, good-bad, and loyal-disloyal, were adjudged evaluative. The evaluation of English Canadians was derived by summing the ratings on these scales. A high score on this measure indicates a positive evaluation of English Canadians.

19. French Canadians (evaluation). Ss rated the concept, French Canadians, on the same 30 scales (but in a different order) as used above (see Appendix A, page A - 32). The student's evaluation of French Canadians was derived by summing his ratings on the eight evaluative scales described above. A high score reflects a positive evaluation of French Canadians.

20. European French People (evaluation). This measure was derived from semantic differential ratings of the concept, European French People, obtained on the same 30 scales (in a different order) as described above (see Appendix A, page A - 31). The higher score on the evaluative scales (see above) the more favourable the evaluation of European French People.

21. French Course (evaluation). Ss rated the concept, My French Course, on 23 semantic differential scales which were selected for their appropriateness to such a concept (see Appendix A, page A - 34). Three judges had previously independently classified eight of the scales as evaluative. These scales were

meaningful-meaningless, useful-useless, pleasant-unpleasant, valuable-worthless, rewarding-unrewarding, good-bad, necessary-unnecessary, and important-unimportant. A high score on this measure indicates a favourable evaluation of My French Course.

22. My French Teacher (evaluation). Ss rated the concept, My French Teacher on the same 30 scales (but in a different order) as those used to rate the ethnic group concepts (see Appendix A, page A - 35). Ratings on the evaluative scales (see number 18 above) were summed to provide an evaluative score; the higher the score, the more favourable the reaction to my French Teacher.

As stated above (prior to variable 18), Ss also rated the concepts, Canadian Indians, (see Appendix A, page A - 29), and My English Course (see Appendix A, page A - 33). The scales for the first concept were identical to those used for rating the other ethnic group concepts. Those for the second concept were identical to those used for Variable 21. In each case, the scales were presented in a different random order.

The following variables were indices of French achievement, and these indices differed from grades 7 and 8 to grades 9-11. In the list to follow, the measures of French achievement obtained on the grade 7 and 8 students are described first. Variable 23 was assessed on all students. Variables 24 and 25 were assessed only on grade 7 students, variables 26 and 27 were assessed only at the grade 8 level. Following the description of these measures the indices of French achievement obtained on the students in grades 9-11 are described.

23. French Vocabulary. This test consisted of 50 items and was adapted from the Cooperative French test (Greenberg and Spaulding, 1940). It consisted of items with a wide range of difficulty so that it could be used at all grade levels, and because of this, students were encouraged to guess. In this form,

students were presented with a booklet containing all the items. Each item consisted of a French word, followed immediately by five English words. The test was developed to be used in conjunction with a tape recording. On the tape recording, the students heard the item number, and the French word read twice. They were given a seven second pause after this before the next item number was read. (This was necessary because the emphasis in the grade 7 and 8 program was on oral-aural skills with little use made of visual presentation of French words). The student was required for each item to indicate the English word which most nearly corresponded in meaning to the French word presented. The higher the score, the greater the French vocabulary knowledge.

24. French Aural Comprehension I - 7. This test, constructed by French teachers and consultants with the London Board of Education, was developed especially for students in grade 7. It consists of 32 multiple choice items for which students must select the correct alternative in answer to a question asked about a line drawing presented with that item. The question and the alternatives are presented visually on the question booklet, and both are presented auditorially by means of a tape recording. A high score on this test indicates that the student can understand a question asked in French about a stimulus object and recognize the appropriate answer in French to that question.

25. French Aural Comprehension II - 7. This test was also constructed by French teachers and consultants with the London Board of Education to be used with students in grade 7. It consists of 34 multiple choice items and is identical in format to Variable 24. A high score on this test indicates a high level of achievement in French aural comprehension.

26. French Aural Comprehension I - 8. This test, constructed by French teachers and consultants with the London Board of Education, was developed

especially for students in the grade 8 program. The format is identical to that used in Variables 24 and 25, but the level of vocabulary knowledge and knowledge of French verb tenses required is greater. The test consists of 43 multiple choice items. A high score on this test is indicative of superior comprehension of aural French.

27. French Aural Comprehension II - 8. This test, constructed by French teachers and consultants with the London Board of Education, was intended for students in grade 8. It consists of 42 multiple choice items and is identical in format to Variable 26 except that different vocabulary is used. A high score on this test indicates a high level of achievement in French aural comprehension.

The following four measures are subtests of the Canadian Achievement Tests in French (CATF) (1968) which were administered to the students in grades 9-11. The CATF is a standardized paper and pencil test that is normally administered to students as a unpaced test with a one hour time limit. As used in the present investigation, time limits were imposed on each of the four subtests with the provision that if students completed one subtest before the time limit expired, they could return to earlier subtests. The subtests are:

28. CATF French Vocabulary. This subtest consists of 35 multiple choice items. Each item consists of a word or phrase followed by five alternatives. There are five parts to this subtest. The first part (5 items) presents an English stimulus word, and the alternatives are presented in French. The second part (11 items) presents a French stimulus word with the alternatives presented in French. The third part (9 items) presents French stimulus words with the alternatives in English. Part IV presents 7 items each containing five pairs of French words, and students must select the one pair in each item most nearly

opposite in meaning to each other. The fifth part presents 3 French sentences with one word missing, and students must select from five alternatives the French word which is most appropriate. A time limit of eight minutes was permitted; a high score indicates substantial French vocabulary knowledge.

29. CATF French Grammar. This subtest consists of 45 multiple choice items, and is made up of three sections. A time limit of 12 minutes was permitted. The first section (28 items) presents an English sentence, followed by its French translation with one word omitted. Students are required to select, from five French alternatives, the missing word. Section two (15 items) presents a French sentence with one missing word, and students are required to select the appropriate word from five French alternatives. The third section (2 items) presents English phrases, and students must select from five alternatives the correct French translation. A high score on this test indicates a good command of French grammar.

30. CATF French Comprehension. This test consists of 10 items, and is made up of two sections. The first section (6 items) presents three written selections of French prose and students were required to answer two questions (in French) about each selection. The second section (4 items) presents incomplete French sentences, and students are required to select from five alternatives the word or phrase which most logically completes the sentence. Students were allowed six minutes for this part. A high score indicates a good comprehension of written French.

31. CATF Pronunciation. Ss were given six minutes in which to answer 12 items designed to measure their knowledge of how French words are pronounced, rather than their actual ability to pronounce the words correctly. A high score on this test indicates an appreciation for the correct pronunciation of French words.

32. Intelligence. Indices of intelligence were determined for each student from school records.

Procedure

The testing was conducted in four sessions beginning in April 1972 and ending in June, 1972. Except where otherwise indicated all testing was conducted by members of the research team who received prior instruction on how to administer the tests, and how to deal with questions raised during the testing sessions. All testing was conducted in the students' classroom, and each session required 40 minutes.

The face sheet of the three attitude questionnaires was read aloud to the students at the beginning of each session in which they were administered. This face sheet requested the student's name, sex, age and school. In addition it contained two paragraphs describing in general terms the purpose of the project, the importance attributed to confidentiality and the procedures which would be followed by the research team in ensuring that anonymity would be preserved despite the fact that students' names were required, and the importance of providing answers that were as frank and accurate as possible. The introductory section further indicated that, although it was important to the research aims that all students answered all items, answering the questionnaire was voluntary and that they should feel free to omit any or all items which they did not want to answer. The face sheet for the attitude questionnaires, which were administered during sessions 1 to 3, is reproduced in Appendix A, page 1.

Session 1. The first testing session was conducted for all grade levels (7 to 11) in April, 1972. During this session students responded to 80 attitude items, 19 items from the Motivational Intensity and Desire to Learn French scales and the Orientation Index. The scales administered during this session with the number of items administered in that scale were the tests measuring Attitudes toward French Canadians (30), French Class Anxiety (11), General

Classroom Anxiety (10), Ethnocentrism (15), Attitudes toward Learning French (14), Motivational Intensity (10), Desire to Learn French (9), and the Orientation Index.

The test booklet presented to the students consisted of the face sheet (see Appendix A, page 1), the instructions for the items using the Likert procedure (see Appendix, page A - 2), the 80 items in a fixed random order for the first five tests described in the preceeding paragraph, the instructions for the Motivational Intensity and Desire to Learn French scales (see Appendix A, page A - 19), the 19 items for these scales presented in a fixed random order, and the Orientation Index.

Session 2. The second testing session was conducted in early May, 1972. It consisted of the following tests (the number of items is presented in brackets following each test): Parental Encouragement (12), Anomie (10), Machiavellianism (15), Ratings of the Instrumental Orientation (8), Ratings of the Integrative Orientation (8), semantic differential ratings of the concepts, My French Teacher (30), My French Course (23),and My English Course (23), and measures of Motivational Intensity (9) and Desire to Learn French (9).

The test booklet presented to the students consisted of the face sheet (see Appendix A, page 1) the instructions for the items presented using the Likert procedure (see Appendix A, page 2), the items in a fixed random order for the first five tests (53 items), the semantic differential instructions (see Appendix A, page A - 27), the three concepts (in different random orders) to be rated, the instructions for the Motivational Intensity and Desire to Learn French scales (see Appendix A, page A - 19) and the items for these scales presented in a fixed random order.

Session 3. The third testing session was conducted during the latter part of May, 1972. The tests administered (the number of items in each are presented in brackets) included the measures of Attitudes toward the European French (30), Authoritarianism (12), Need Achievement (14), Interest in Foreign Languages (11), semantic differential ratings of the concepts, Canadian Indians (30), English Canadians (30), European French people (30), and French Canadians (30), and the French Vocabulary Test (50).

The test booklet presented to the students consisted of the face sheet (see Appendix A, page 1), the instructions for the items using the Likert procedure (see Appendix A, page A - 2), the 67 items in a fixed random order for the first four tests described in the above paragraph, the instructions for the semantic differential (see Appendix A, page A - 27), and the four concepts (in different random orders) to be rated. At the completion of this booklet, all students were given the French Vocabulary test.

Session 4. The fourth testing session was conducted in June, 1972. During this period, the French teachers of the grade 7 and 8 students administered the two tests of aural comprehension appropriate to that grade level. Members of the research team administered the CATF to students in grades 9-11.

Although 34 variables are included in the list of measures described in this section not all measures were submitted to the analyses described in the subsequent sections. Because of this, the variables actually referred to in any analysis discussed in the Results and Discussion section will be specified before the results of that analysis are presented.

RESULTS AND DISCUSSION

Since there were three objectives for the initial study, this section will consist of three parts, the Development and Reliability of the Attitude/Motivation Measures, the Relations of the Attitude/Motivation Measures to

French Achievement and Developmental Changes in Attitude, Motivation and French Achievement.

DEVELOPMENT AND RELIABILITY OF THE ATTITUDE/MOTIVATION MEASURES

A major aim of this research project was the development of indices of several aspects of the integrative motive which could be used with students of different ages and in different stages in the language acquisition process. One prime consideration in this respect is a series of tests with high internal consistency reliability. To achieve this end, considerable time was spent developing items which appeared to tap the conceptual domain of each of the attitudinal-motivational variables posited to be of importance in second-language acquisition. As described in the preceding section, these items were then administered to students at each of the grade levels.

When selecting items from a large pool for a particular measuring instrument, the standard procedure is to focus largely on the correlations of the items with total scores based on the remaining items believed representative of the variable of interest. These are referred to as item-total correlations. For example, if an investigator had assembled 25 items which he felt measured attitudes toward French Canadians, and he wanted the ten "best" items, the typical procedure he would follow is to correlate the score for each item with a total score derived from the remaining 24 items. Doing this, he would end up with 25 item-total correlation coefficients (one for each item), and would select those 10 items with the highest correlations. The logic underlying this procedure is that the items correlating highest with the total score measure best what the total score reflects. Of course this assumes that the total scores provide an index of whatever it is the investigator wishes to measure, but this is another question, and one we shall address later. At least one other investigation (Kirby, Gardner, Scapinello and Aird, 1973) has attempted to consider other parameters in the item selection procedure, but that investigation suggested that the traditional approach provided the most reliable and, in that situation, the most valid index.

In the present situation, the traditional procedure could not be applied directly. What was required was one set of items for each measuring instrument which would be equally applicable for each of the five grades. At the same time, however, it was necessary to compute the item-total correlations separately for each grade to study the item characteristics within each grade rather than pooling all students together and have the item-total correlations confounded with grade differences. The problem was solved by considering one-half of the total number of items administered in each subtest as "potentials". (In point of fact, the research team referred to them as "made its", but that is grammatically cumbersome.) The number of times each item was classified as a "potential" over the five grades was then determined, and that number of items required for the final test with the most number of potential classifications were retained. In no instance was it necessary to select an item with fewer than three out of five "potential" classifications, thus the items selected were generally appropriate to most of the grades.

The items contained in the original pool of items are presented by scale in Appendix A. Those items which were finally selected for the final scale are indicated by an asterisk. To summarize this material, Table 1 presents the number of items contained in the original pool and the number of items finally retained.

Insert Table 1 About Here

The major purpose of selecting items with high item-total correlations is to produce scales which have high internal consistency reliability. One index of internal consistency reliability is the Kuder-Richardson 20 reliability coefficient. The Kuder-Richardson 20 reliability coefficients of the final tests are presented in Table 2. Although these coefficients are potentially biased because they are based on selected items from the larger pool, they are informative. Examination of Table 2 reveals that reliabilities are quite substantial and consistent for the scales measuring Attitudes toward French Canadians, Attitudes toward Learning French, Attitudes toward European French People, Interest in Foreign Languages, Parental Encouragement, Instrumental Orientation, Integrative Orientation, Motivational Intensity and Desire to Learn French (Variables 1, 3, 6, 9, 11, 13, 14, 15, and 16 in Table 2). Each of these tests are important for this project and such results are encouraging.

Insert Table 2 About Here

The reliability coefficients for the remaining tests are not as substantial or generally as consistent. Those for the measures of Authoritarianism, Machiavellianism and Anomie (Variables 8, 10 and 12 in Table 2) are reasonably consistent but much lower than for the above tests. The reliability coefficients for the measures of French class anxiety, General

Classroom Anxiety, Ethnocentrism, and Need Achievement (Variables 2, 4, 5, and 7 in Table 2) tend to be even lower, and less consistent than any of the other measures. It will be noted that for each of these tests, there is at least one grade for which the reliability coefficient is particularly low.

What do all of these coefficients mean? First there are nine measures which evidenced appreciable internal consistency. To a considerable extent, this could be attributed to the general clarity of the variables involved. The variable of Parental Encouragement, for example, is quite unequivocal in its definition and it is reasonable to expect that items written to assess parental encouragement would tend to result in similar responses on the part of the students. High internal consistency implies simply that each of the various items yields comparable assessments. The lower, and somewhat inconsistent reliability coefficients for the other seven tests is attributable largely to the complex nature of the variables themselves. Measures such as the Ethnocentrism scale, or the Authoritarianism scale were adapted from other investigations (both scales were developed by Adorno et al., 1959), yet their reliability coefficients tend to be lower simply because the variables themselves are many faceted. Similar interpretations can be made of the other indices with low reliabilities. The concepts themselves are so complex that different items designed to tap them reflect this complexity thus reducing the internal consistency of the tests. In general, however, the reliability coefficients are all of sufficient magnitude to provide assurance that relationships among the measures will prove relatively stable.

RELATIONS OF THE ATTITUDE/MOTIVATION MEASURES TO FRENCH ACHIEVEMENT

The attitudinal/motivational measures used to investigate the relationships among these measures and indices of French Achievement were those based on the reduced number of items retained for the final scales. The actual variables included in the analyses at each grade level are indicated in the appropriate factor matrices. In the discussion to follow, the results are considered separately for each grade level.

Grade 7

Pearson product-moment correlation coefficients were computed among the 26 variables assessed on the grade 7 students. The correlation matrix is presented in Appendix C, page C - 1. This matrix was factor analyzed using the principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. Four factors were obtained to account for the correlations among the 26 measures obtained on the grade 7 students. These factors accounted for 88% of the total estimated communality. These factors were rotated by means of the Varimax solution (Kaiser, 1958). The rotated factor matrix is presented in Table 3.

Insert Table 3 About Here

Factor I obtains appreciable (i.e., greater than ± .30) loadings from 15 variables, and appears to reflect an attitudinal-motivational dimension previously referred to as an Integrative Motive (Gardner, 1960; Gardner, 1966). Ten variables defining this factor appear on a comparable factor in each of the subsequent analyses, and consequently will be highlighted here. The pattern of loadings on this factor suggest that Ss with a strong Integrative Motive have favorable attitudes toward French speaking people (Variables 1 and 6), are interested in French and foreign languages (Variables 3 and 9), are motivated to learn French (Variables 15 and 16) for both integrative and instrumental reasons (Variable 14 and 13), have favorable attitudes toward their French course (Variable 21), and receive parental encouragement for studying French (Variable 11). As stated above this pattern appears in all analyses. Additional variables contributing to this factor for the grade 7 students include the measures of authoritarianism, anomie, favorable evaluations of English Canadians, French Canadians, and the French Teacher (Variables 8, 12, 18, 19, and 22, respectively). The implication is that grade 7 students who are integratively motivated tend to be somewhat authoritarian and dissatisfied with their role in society, though they have favorable perceptions of English Canadians, French Canadians and the French Teacher.

Factor I has been interpreted as reflecting an Integrative Motive despite the fact that ratings of the intensity of both the integrative and instrumental orientations contribute to this factor. Although this might seem as somewhat arbitrary in factor definition, this appears to be the most parsimonious one. There is clearly a large attitudinal component reflected in the factor which emphasizes an accepting and positive orientation toward foreign groups and languages, and a concomitant interest in studying the language. Furthermore, it should be noted that on this factor, Variable 17 comes close to being included. This measure, the Orientation Index, forces Ss to choose between integrative and instrumental reasons; the positive loading suggests that grade 7 Ss who are integratively motivated tend more frequently to choose the integrative reasons. It will be observed in the subsequent analyses that this pattern continues, but that it is not until students have become more mature and more proficient in French (i.e., grades 10 and 11) that this association becomes highly pronounced.

There is some suggestion in these results that integratively motivated grade 7 students tend to be somewhat more successful in acquiring French vocabulary (Variable 23), and some aspects of aural comprehension (Variable 24). Since this is the first real contact with learning French, it is reasonable that such an association would exist, but it will be noted in the subsequent analyses with the older Ss, that this association is not stable and that other factors come into play.

Factor II appears to reflect primarily a French Achievement dimension. Appreciable positive loadings are obtained from the three measures of French Achievement (Variables 23-25), as well as the measures of Intelligence (Variable 26), Desire to Learn French (Variable 16), and Attitudes toward the French Course and French Teacher (Variables 21 and 22). Appreciable negative loadings are obtained from the measures of Ethnocentrism (Variable 5), Authoritarianism (Variable 8), Machiavellianism (Variable 10), and Anomie (Variable 12). Viewing Factor II as a French Achievement dimension, this configuration suggests that general achievement in French among grade 7 students is associated with intelligence on the one hand, and on the other, with an interest in learning French, favorable attitudes toward the learning environment (i.e., the teacher and course), and an accepting non-ethnocentric, non-authoritarian, non-manipulative, and satisfied orientation to life. It will be noted that this interpretation compliments that provided for Factor I in that it demonstrates again an association between attitudinal variables, and second language achievement. Many of the attitudinal variables, however, are of a general nature not directly related to the French language or French-speaking people. It will be recalled that these students are young and that this is their first experience with learning French. Perhaps, therefore, thay have not had the opportunity to build strong associations, except for the highly situationally specific ones of the course and the teacher, between many attitudinally specific variables and second-language achievement. Instead, stronger associations exist between generalized attitudes, presumably developed in the home (see Gardner, Taylor and Feenstra, 1970), and students' achievement in the initial stages of second-language acquisition. One hypothesis which might be formulated at this stage is that this association may decrease with added maturity and contact with the second language, and that more specific language-related attitudes might come into play at that time.

Factor III receives substantial loadings from seven variables, and the predominant characteristic appears to be Anxiety (note the high loadings for Variables 2 and 4). Loadings obtained from the other variables suggest that high anxious Ss are ethnocentric (Variable 5), machiavellian (Variable 10), anomic (Variable 12) and tend to be somewhat lacking in a need for achievement (Variable 7) and in their degree of motivation to learn French (Variable 15). It seems clear that Anxiety, although showing expected relations with the various generalized attitude measures, is not related to achievement in French, at this grade level even though such anxiety does result in a decrease in the motivation to learn French.

Eight variables define Factor IV. Since five of these are evaluative judgments involving the semantic differential (Variables 18-22), it is possible that much of the variance contributing to this factor is specific to the semantic differential technique. Nonetheless, an alternative interpretation, suggested by all the loadings, could be that this reflects an Evaluative dimension. Ss who favorably evaluate English Canadians (Variable 18) make similar evaluations about French Canadians, European French People, and their French Course and French Teacher (Variables 19-22). Furthermore, such students have positive attitudes toward the European French (Variable 6), express some interest in learning French (Variable 16), and tend to be high in need achievement (Variable 7). This factor of Evaluation nevertheless is not related to French achievement.

Grade 8

The correlation matrix of the 26 measures obtained on the grade 8 students is presented in Appendix C, page C - 2. This matrix was factor analyzed using the principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. Four factors were necessary to account for the correlations among the 26 measures obtained on the grade 8 students. These factors accounted for 85% of the total estimated communality. The varimax rotated matrix is presented in Table 4.

Insert Table 4 About Here

Factor I is defined by the loadings obtained from 17 variables. As was the case for Factor I in the grade 7 analysis, substantial loadings are obtained by the ten variables, Attitudes toward French Canadians, Attitudes toward Learning French, Attitudes toward European French People, Interest in Foreign Languages, Parental Encouragement, Instrumental Orientation, Integrative Orientation, Motivational Intensity, Desire to Learn French, and Attitudes toward the French Course (Variables 1, 3, 6, 9, 11, 13, 14, 15, 16 and 21). It seems best interpreted, therefore, as an Integrative Motive factor. As with the grade 7 Ss the integrative motive in this case is also associated with favorable attitudes toward English Canadians, French Canadians, and the French Teacher (Variables 18, 19 and 22). The marginal, positive loading of the Orientation Index (Variable 17) on this factor parallels the findings obtained with the grade 7 sample and provides further support for the interpretation of Factor I as an Integrative Motive factor. Unlike the grade 7 Ss, however, a strong integrative motive among grade 8 Ss is also associated with high need achievement, low machiavellianism, and high IQ, and achievement in French vocabulary (Variables 7, 10, 23 and 26). (It will be recalled that in grade 7, the French vocabulary test was only slightly associated with the integrative motive). With grade 8 Ss, therefore, it appears as though integratively motivated Ss are highly successful in French vocabulary, somewhat more intelligent, with a strong need to achieve, and a somewhat non-manipulative orientation toward people.

Five variables define Factor II, and the major component seems to reflect an Ethnocentrism Dimension. Ss who are highly ethnocentric, are authoritarian, machiavellian, and anomic, and somewhat low in intelligence. Similar ethnocentric factors have been obtained in other studies (Gardner, 1960; Gardner and Lambert, 1972), and in fact this configuration was also present in Factor II for the grade 7 Ss in this study (though with opposite signs). In that analysis, achievement in French was associated with a non-ethnocentric ideology. In the present analysis, however, no association with French achievement is evident. It seems that by grade 8 and the second year of French, generalized attitudes are no longer associated with French achievement.

Factor III is best identified as a French Achievement factor since of the five variables defining it, the three predominant ones are measures of French achievement (Variables 23-25). The two remaining variables contributing to this factor suggest that French Achievement at grade 8 is associated with an integrative orientation (Variable 17) and an increased motivation to learn French (Variable 15). This factor compliments Factor I in this analysis in that it highlights a definite relationship between integrative motivational elements and French achievement. Clearly, at the grade 8 level, French achievement is more directly associated with specific motivational elements than was the case at the grade 7 level.

Factor IV is clearly an Anxiety dimension. The major loadings for this factor are obtained by the two measures of anxiety (Variables 2 and 4). The total configuration suggests that highly anxious Ss tend to positively evaluate English Canadians and French Canadians (Variables 18 and 19).

Grade 9

Twenty-eight measures were obtained on the grade 9 students. The correlation matrix of these variables is presented in Appendix C, page C - 3. This matrix was factor analyzed using the principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. Five factors were required to account for the correlations among the 28 measures obtained on the grade 9 Ss. These factors accounted for 91% of the total estimated communality. The varimax rotated matrix is presented in Table 5.

Insert Table 5 About Here

Thirteen variables define Factor I. Ten of these are the, by now, familiar ten measures which have been interpreted as reflecting the Integrative Motive (Variables 1, 3, 6, 9, 11, 13, 14, 15, 16 and 21). The loadings of the three remaining variables suggest that an integrative motive is associated with a low level of anxiety in the French Class (Variable 2), and with favorable evaluations of European French People (Variable 20) and the French Teacher (Variable 22). Again it will be noted that an integrative orientation shows a tendency to be associated with this factor (Variable 17), though the association is not pronounced. Although, for grade 9 Ss, the Integrative Motive appears to be independent of the five measures of French achievement, it seems significant that integratively motivated Ss are relaxed and confident in the French class.

Factor II is clearly a French Achievement dimension. Appreciable loadings are received from both measures of French vocabulary (Variables 23 and 24), French Grammar, Comprehension and Pronunciation (Variables 25-27). Other variables loading on this factor suggest that French Achievement is associated with Intelligence (Variable 28), and a non-ethnocentric ideology (Variable 5). A similar pattern was suggested in the interpretation of Factor II for the grade 7 Ss. In that case, achievement in French was associated with a non-ethnocentric orientation but this pattern was not evident with the grade 8 Ss. Rather, at the grade 8 level, achievement in French was associated with more specific motivational elements. The question arises, therefore, as to whether these differences are the result of sampling fluctuations or whether they reflect true changes in the dynamics of second-language acquisition with increasing skill and maturity. One point, noted earlier, was that the grade 9 curriculum reflects a change in emphasis from that followed in grades 7 and 8. Grade 7 and 8 focus on the development of basic skills in speaking and understanding oral French. Although the grade 9 curriculum includes these skills, greater stress is placed on grammar, reading and writing, and as such represents the initial phase in the development of new skills. In this respect, the association between elements of French achievement and a non-ethnocentric orientation, noted also in grade 7, could reflect a true relationship between the initial acquisition of such skills and an accepting orientation. Patterns in later grades could test the adequacy of this possible interpretation.

Factor III is defined by five variables. Four of these reflect positive evaluations of English Canadians, French Canadians, European French, and the

French Teacher (Variables 18, 19, 20, 22), and thus it seems reasonable to interpret this in the same way as a comparable factor was interpreted for the grade 7 Ss, thus designating this as an Evaluative factor. In this case, Ss who positively evaluate ethnic groups and people, tend to be somewhat authoritarian (Variable 8).

Factor IV, for the grade 9 Ss, corresponds to Factor II for the grade 8 Ss. Seven variables define this factor, the major four being the measures of ethnocentrism, authoritarianism, machiavellianism, and anomie (Variables 5, 8, 10, 12). Consequently, it appears to describe an Ethnocentrism Dimension. Negative loadings are obtained from the remaining three measures, need achievement, desire to learn French, and the Orientation Index (Variables 7, 16, 17) suggesting that Ss with an ethnocentric orientation tend to be content with less than perfect performance, and to be disinterested in learning French, though they do profess an instrumental orientation in their approach to language study.

Factor V clearly reflects an Anxiety dimension. Appreciable loadings are obtained from only two variables, French Class Anxiety and General Classroom Anxiety. No association with French achievement is evident.

Grade 10

The correlation matrix of the 28 measures obtained on the grade 10 students is presented in Appendix C, page C - 4. This matrix was factor analyzed using a principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. Five factors were required to account for the correlations obtained with the sample of grade 10 students. These factors accounted for 86% of the estimated common variance. The varimax rotated matrix is presented in Table 6.

Insert Table 6 About Here

Factor I is defined by the loadings of 13 variables. Ten of these are the same as those obtained on the first factor for each of the other grades, and consequently this factor is best identified as the Integrative Motive dimension. The three additional variables (Numbers 7, 17 and 22) are indicative of high need achievement, an integrative orientation and favourable attitudes toward the French teacher respectively. For the first time, therefore, a clear preference for an integrative orientation (Variable 17) is associated with the various characteristics of the integrative motive indicating a possible development sequence in the total attitudinal configuration.

Factor II receives appreciable loadings from nine measures and seems best identified as a French Achievement dimension. The highest loadings are obtained from the five measures of French Achievement (Variables 23-27), while appreciable positive loadings are obtained from the measures of Intelligence, Attitudes toward Learning French, Desire to Learn French and a substantial negative loading is obtained from the measure of French Class Anxiety (Variables 28, 3, 16 and 2, respectively). This pattern suggests that French achievement in grade 10 is associated with intelligence, favourable attitudes toward Learning French, a strong desire to learn French, and an absence of anxiety in the French Class. Thus, by the grade 10 level, more robust associations between some of the attitudinal variables and French achievement are beginning to evidence themselves.

Factor III seems best identified as an Ethnocentrism Dimension. Appreciable positive loadings are received from five variables, the Ethnocentrism scale, the F-scale, the machiavellianism scale, the anomie scale, and the intensity of the instrumental orientation (Variables 5, 8, 10, 12, and 13).

At the same time, a negative loading is obtained from the Orientation index (Variable 17) indicating a preference for instrumental values in learning French. Thus, for the grade 10 students an ethnocentric outlook seems clearly associated with an instrumental orientation toward language study.

Factor IV obtains high loadings from four variables, evaluative reactions toward English Canadians, French Canadians, and the European French, and attitudes toward the European French. This factor is best identified in terms of Evaluative Reactions toward Ethnic Groups, though just why Variable 1, Attitudes Toward French Canadians does not contribute to this dimension is not clear.

Factor V is defined by the loadings of four variables, French Class Anxiety, General Classroom Anxiety, the Ethnocentrism Scale, and the F-Scale. The major component of this dimension is Anxiety, however, there is also an association evident between anxiety and ethnocentric and authoritarian reactions.

Grade 11

A total of 27 measures were obtained from the grade 11 students. The measures are identical to those used for the grade 10 sample save for the fact that no intelligence test scores were available for the grade 11 students. The correlation matrix of these measures is presented in Appendix C, page C - 5. This matrix was factor analyzed using the principal axis solution with the highest correlation for a variable serving as its communality estimate. Five factors accounted for the correlations obtained among the 27 variables in the grade 11 sample. These factors accounted for 91% of the total estimated communality. The varimax rotated matrix is presented in Table 7.

Insert Table 7 About Here

Factor I receives appreciable loadings from 12 variables, the ten defined previously as reflecting an Integrative Motive, plus the need achievement scale and the orientation index (Variables 7 and 17). As with the grade 10 sample, a clear integrative orientation is associated with the integrative motive, and again need achievement is also related.

There is a slight suggestion that indices of French achievement are related to the Integrative Motive. Consistent positive loadings are obtained from four measures of French achievement (see Variables 23-26).

Factor II is the by now familiar French Achievement dimension. The major loadings are received from Variables 23-27 the measures of French achievement; three additional variables (Numbers 3, 15, 16) also contribute substantially. The pattern suggests that students who are relatively proficient in French, are those who have favourable attitudes toward learning French, are motivated to learn French, and express a strong desire to learn French. By the grade 11 level, therefore, French achievement shows a clear association with specific motivational variables.

Factor III is defined by the loadings of six variables. Ss who make positive evaluations of English Canadians, French Canadians, and the European French (Variables 18, 19, 20), also express favourable attitudes toward the European French, are high on need achievement and low on machiavellianism (Variables 6, 7, and 10). Except for the last two variables, this factor is similar to one obtained with the grade 10 sample, the dimension of Evaluative Reactions toward Ethnic Groups.

Factor IV seems best identified as an Anxiety dimension. Students who are anxious in the French Class (Variable 2) are generally anxious in school (Variable 4), and tend somewhat to be dissatisfied with their role in society (Variable 12). The inclusion of the anomie variable on an anxiety dimension at the grade 11 level may be of some significance from a developmental point of view. The anxiety component is, however, consistent in all the grades.

Factor V is defined by four variables. Students who express an ethnocentric ideology tend also to be authoritarian, anomic, and to make favourable evaluations of the French Teacher. This factor seems best identified, therefore, as an Ethnocentrism Dimension and is consistent with factors obtained with each of the other grades.

Summary of Factor Analytic Results

When attention is directed toward the factors obtained from all five analyses, clear similarities and differences emerge, and it seems evident that there are definite developmental changes. In all five grades, three of the factors are fairly consistent though elements of the factors differ from grade to grade. These three factors were identified as an Integrative Motive, French Achievement, and Anxiety factor respectively. Only the first two are important for an understanding of the development of French achievement over grades.

As indicated throughout the preceeding descriptions at each grade level, the Integrative Motive represents a fairly homogeneous collection of attitudinal variables. The consistent configuration obtained suggests that an integrative motive is characterized by a strong motive to learn the language (Variables 13 - 16) of another language group towards which the individual has positive attitudes (Variables 1 and 6) and that such an interest, perceived as supported by the parents (Variable 11) results in favourable attitudes toward the language learning situation itself (Variables 3, 21), and a generalized interest in all second languages (Variable 9). The definition is consistent with that proposed in earlier studies (Gardner, 1960; Gardner, and Lambert, 1959; 1972) and is supported at all five grade levels investigated in the present study. Although there is not a strong association between the French achievement measures and the factor identified as the Integrative Motive factor at any grade level, a definite pattern can be noted. At the grade 7 level, the French achievement measures show some association with the Integrative Motive, and this association becomes even more pronounced in grade 8. In grade 9, however, there is virtually no association between the Integrative Motive factor and the indices of French achievement. This pattern could be due to a number of reasons. The measures of French achievement used are different, the program itself is different, and the students are more selected in that at grade 9, French is truly an optional subject. The most parsimonious interpretation would seem to involve these latter two considerations. It seems possible that at the grade 9 level, we are dealing with a different population of students who in fact are just beginning the acquisition of new skills. The students at this level are taking an optional course which is graded as part of their curriculum, and moreover they are beginning the acquisition of the more formal aspects of the language. It seems highly likely that in the initial stages of second language acquisition, the integrative motive might not be as important a determinant of achievement as more cognitive type of skills such as language aptitude or intelligence. This interpretation is strengthened by the pattern of loadings for the students in grades 10 and 11. In these two grades, the indices of French achievement show progressively higher associations with the Integrative Motive factor.

Similar interpretations are suggested when attention is directed to the French Achievement factors obtained at each grade level. At the grade 7 level, the factor of French Achievement is highly associated with intelligence, favourable evaluations of the course and the teacher, and generalized non-ethnocentric attitudes. Although specific motivational variables are related, their importance is overshadowed by the more generalized accepting attitudes toward outgroups. By grade 8, however, intelligence and non-ethnocentric attitudes are no longer contributors to the French Achievement dimension and instead an integrative orientation and a strong motivation to learn French are beginning to show their importance. By grade 8, the students are still enrolled in what appears to be a compulsory though admittedly ungraded course, and have acquired two years experience in an oral-aural program, thus it might be anticipated that motivational variables would play a greater role. At grade 9, the pattern reverses itself again. Intelligence is the major contributor to the French Achievement dimension, and the influence of the non-ethnocentric orientation is again evident. Recall, however, that in grade 9, new French skills are being introduced, and the students are now registered in an optional, but graded, course. At grade 10, the pattern noted in grade 8 becomes once again apparent. Intelligence plays less of a defining role on the French Achievement dimension, whereas specific motivational components, attitudes toward learning French, and a lack of anxiety in the French class become of greater significance. A very similar pattern emerges in grade 11, though the specific motivational components gain in importance, and the French class anxiety component decreases.

These results are based on five different groups of students differing in age and grade in school, and with their exposure to French instruction. They differ further, in that in the first two years, the students are experiencing an aural-oral French program which though viewed as part of their curriculum does not contribute to their graded school performance. In the latter three years, however, the students are enrolled in an optional course; moreover it is one that focuses on the more formal aspects of French. They learn to read, they study grammar, and they must acquire a larger vocabulary. With all of this, what can the results tell us about the student moving through the French program from grades 7 to 11?

We can, from these results, construct a composite picture of such a student. When he enters grade 7, it is reasonable to visualize the student when he first encounters French. If he has favourable attitudes towards French speaking people, and a general non-ethnocentric orientation (presumably as suggested by Gardner, Taylor and Feenstra (1970) such attitudes would have developed in his early home life), he will get greater enjoyment out of the class than if he has opposite attitudes (also developed in the home). If these are coupled with intelligence he will likely do well in the course, but in either event he will probably progress to grade 8. In grade 8, such a student will probably do better in French than his counterpart with unfavourable attitudes (regardless of intellectual differences), and it is meaningful to speculate that he will find the course rewarding; even to the point, that he may plan to take it as an option in grade 9. It is reasonable also to speculate that his counterpart with more negative attitudes may look longingly to grade 9 where he will not "have" to take French. Even his counterpart, however, may find himself taking French in grade 9 because of pressures from his family, his peers, or maybe even his own desire to succeed in the course. When both students are in grade 9, however, it is probable that they will find that more is expected of them than in previous years. More demands are made of them, and they must have the intellectual or verbal skills necessary to succeed. Our fictitious student with the favourable attitudes, however, will work hard and begin to develop the skills. His counterpart, may succeed if he has the requisite verbal skills, but he may find it less rewarding. Without the necessary verbal skills, he might well plan on dropping out in grade 10. In grade 10 and 11 our fictional student will not only find the class rewarding, but he will also find that he is beginning to develop some proficiency in French, and moreover that he is acquiring at least parts of the cultural characteristics of the French. He is, in all probability on the way to becoming bilingual. And what of his counterpart? He may have dropped out. On the other hand, he may have stayed in the program and passed each year. It is probable, however, that he found the course difficult, and somewhat unrewarding. He may have developed some proficiency in French. He may also be one of those who when he finishes high school may report that he took six or seven years of French but never learned to speak it.

Obviously, the above is an oversimplified description of a highly complex situation. It does not take into account a multitude of influences that can operate on the student. It does, however, reflect the factor analytic results. What it does not do completely is take into account the various changes in attitudes which can occur among students of French from grade 7 to 11. That is the concern of the next section.

DEVELOPMENTAL CHANGES IN ATTITUDE, MOTIVATION AND FRENCH ACHIEVEMENT

As students progress through a program of second-language instruction, it is obvious that they undergo many changes. Ideally, the best way in which to monitor these developmental changes is to study the same group of children as they proceed through their course of studies. An obvious disadvantage of such an approach, however, is the time required to conduct this type of study. If, as in the present situation, attention were to be directed to changes over a five year period, the temporal delay would indeed be great and the loss in subjects due to movement from school to school and the like would be considerable. The alternative is to use a cross-sectional approach in which students at the different stages in any given year are compared. This approach too, has many disadvantages. The students may differ in terms of their home environment, their previous curricular experiences in French, and the very make-up of the classrooms in which they are present. Furthermore, in the system under investigation the very populations sampled are potentially quite different. Although students in grade 7 are virtually required to take French, the course becomes more or less optional thereafter. Students in grade 8 are generally not aware of the optional nature of the French program for them, so at that level there is some selection though it is not pronounced. In grades 9 and following, however, the students are enrolled in secondary schools where French, like any other subject is truly optional and the proportion of students dropping French is considerable. Any comparisons, therefore, of average scores of students in the upper grades, 9 - 11, with those in the lower grades, 7 and 8, must contend with these differential drop-out characteristics, and it would be unwise to consider such results as reflecting true changes in the average student as he progresses through the program. What they do reflect, however, is the general make-up of the classes at each grade level. As such they can provide the researcher and the French language teacher with some insights about what to expect of students at each grade level.

With these precautions in mind, the results of the grade comparisons are now presented. Table 8 summarizes the results of analyses of variance comparing the five grades on each of the major variables. As was the case with the factor analytic results, the scores on the attitude/motivation measures were derived from the final scales. Table 8 presents the F-ratio for each measure as well as the means for each grade. An F-ratio which is not significant indicates that the means for the five grades do not differ appreciably among themselves. A significant F-ratio, on the other hand, suggests that there is greater variability in the means across the five grade levels than

Insert Table 8 About Here

can reasonably be attributed to chance. Or, in other words, at least some of the grades are probably different from at least some of the other grades.

It will be noted in Table 8 that of the 28 analyses of variance conducted, the F-ratios for 19 of them are significant. Investigation of the patterns of the means reveals some interesting trends. In order to present the results in a manner which clarifies the general patterns, the means of those variables for which significant results were obtained are plotted. Figure 1 presents the means for each of the five grades for the variable, Attitudes Toward Learning French. It is clear from this figure that whereas students in grade 7 were quite positive toward learning French, the attitudes of students in grades 8, 9, and 10 are clearly less favourable, and it isn't until grade 11 where this initial enthusiasm is restored. This type of a U shaped relationship with grade level seems to characterize two other variables, Desire to Learn French (Figure 2) and Evaluative reactions toward the French Teacher (Figure 3). The implication of each of these results is a heightened enthusiasm initially when students begin French, a gradual dampening of this ardour as students struggle to acquire basic skills, and then a re-awakening of the romance when possibly the students begin to acquire some proficiency in the language.

Insert Figures About Here

Different patterns are obtained with other variables. For some, scores are initially high at grade 7 and, allowing for some variation, scores generally tend to decrease thereafter. Such a pattern seems to best describe the measures of Ethnocentrism (Figure 4), Authoritarianism (Figure 5), and evaluative reactions to both English Canadians (Figure 6) and the English course (Figure 7). These patterns suggest simply that with increasing grade, students tend to be less ethnocentric, less authoritarian, and to display less positive attitudes towards both English Canadians and their English course. Another type of pattern is suggested by the two measures, Need achievement (Figure 8) and Interest in Foreign Languages (Figure 9). Each of these variables show a gradual increase from grades 7 to 11 (with a quizzical dip at grade 10), indicating that with age, students become more oriented toward achieving high levels of mastery in everything they do and (and this could reflect the selection process) experience a greater interest in learning foreign languages.

Another pattern which emerges appears to be due largely to differences between the students in grade 11 from those in the other grades. For the indices of Motivational Intensity (Figure 10) and Degree of Integrativeness (Figure 11), there are not any pronounced differences among the students in grades 7 to 10, while the grade 11 students are considerably different in that they display a much more intense motivation to learn French, and a greater interest in learning French in order to communicate and interact with French speaking people. The same phenomenon, though reversed, characterizes the measure of Machiavellianism (Figure 12). Grade 11 students appear to be much less manipulative in their approach to others than students in the other grades who do not differ appreciably among themselves.

It is difficult to discern much of a meaningful developmental pattern in the measures of Attitudes toward the European French (Figure 13) or Evaluations of the French Course (Figure 14). In the former case, the attitudes of the grade 7 students are relatively unfavourable to European French people, while those of grade 8 students are quite favourable. This positive affect decreases at grade 9 and again at grade 10, and then presents a rapid upsurge again at grade 11. In the latter case grade 7 students evidence reasonably favourable reactions to the French Course, which drop slightly at grade 8, rise slightly at grade 9, plummet at grade 10 and rise (quite dramatically) at grade 11. The end result of this zig-zag pattern are attitudes at grade 11 which are remarkably similar to those at grade 7.

In attempting to summarize all of the various attitudinal changes, and to integrate them, a meaningful picture tends to emerge. One gets the impression of grade 7 students somewhat myopically attuned to their own culture in that they tend to be ethnocentric, authoritarian, machiavellian and overly enthusiastic in their praise of their own group, and critical of the European French. At the same time, they appear to be interested in and desirous of learning French, impressed with their French teacher and to some extent the French course, though they are not particularly motivated to learn French nor are they overly achievement oriented. As students progress in the French program, their interest in French appears for a while to wane. It is as though during the middle years they find that learning French is not all fun and games and that there is considerable tedium involved in acquiring basic skills which do not come easily. One might imagine that their dreams in grade 7 of becoming bilingual are not coming true and the reinforcements which they experienced for quickly learning simple sentences are not forthcoming when they find they cannot now communicate with ease. During this period, however, they are experiencing an awakening interest in other cultures and a decreasing overglorification of their own culture. It seems that only with the maturity of the grade 11 student and quite likely the developing competence in the French language, that a rational appreciation of their French skills is awakened with the resulting drive to improve their knowledge of French. It is possibly only at this point that we might speak meaningfully of the developing bilingual--a student with some level of French proficiency, true interest in acquiring the language, and one who has undergone a number of attitudinal changes in the process.

It is often stated facetiously that students don't learn any French in their French classes. Whether facetious, or not such remarks are sometimes taken as statements of fact much to the chagrin and discouragement of those dedicated to teaching French. The results of the analyses of variance presented in Table 8 for the indices of French achievement indicate that such comments are indeed erroneous. One test, French Vocabulary Test was presented to students in all five grades and the means are presented in Figure 15. It is clear that there is a clear growth pattern evident across all grades. Although, the grade 8 students do not evidence an appreciable growth, this is to be expected in the current curriculum where emphasis is placed on oral-aural skills, and translation of French-English equivalents is de-emphasized. The growth following grade 8 is, however, impressive.

The CATF was administered to students in grades 9, 10, and 11, so that their performance on the subtests of this battery could be compared. The results are presented in graphical form for each of the subtests, Vocabulary (Figure 16), Grammar (Figure 17), Comprehension (Figure 18) and Pronunciation (Figure 19). Examination of these figures, again shows a steady development of French skills across these three grades. For the measure of grammatical knowledge (Figure 17), the growth is quite linear, while for the other three French skills assessed, the improvement is much more pronounced from grade 10 to 11, than from grade 9 to 10. It seems obvious that this pattern reflects characteristics of the various curricula, nonetheless it is clear that knowledge of French does improve across the three grades. To be sure such growth is to be expected, but the results do attest to the fact that the students are developing competence in French as a result of their training.

TABLE 1

NUMBER OF ITEMS IN ORIGINAL AND FINAL SCALES

		No. of Original Items	No. of Items in Final Scale
1.	Attitudes toward French Canadians	30	10
2.	French class anxiety	11	5
3.	Attitudes toward learning French	14	10
4.	General classroom anxiety	10	5
5.	Ethnocentrism scale	15	10
6.	Attitudes toward European French people	30	10
7.	Need achievement	14	10
8.	Authoritarianism scale	12	10
9.	Interest in foreign languages	11	10
10.	Machiavellianism	15	10
11.	Parental encouragement	12	10
12.	Anomie	10	10
13.	Instrumental Orientation	8	4
14.	Integrative Orientation	8	4
15.	Motivational Intensity	19	10
16.	Desire	18	10

TABLE 2

CO-EFFICIENTS OF RELIABILITY AT EACH GRADE LEVEL

	GRADE 7	GRADE 8	GRADE 9	GRADE 10	GRADE 11
1. Attitudes toward French Canadians	.89	.85	.88	.86	.90
2. French class anxiety	.77	.23	.78	.83	.78
3. Attitudes toward learning French	.96	.82	.93	.95	.94
✓ 4. General classroom anxiety	.80	.49	.79	.82	.78
✓ 5. Ethnocentrism scale	.70	.31	.59	.62	.40
6. Attitudes toward European French people	.93	.93	.88	.87	.86
✓ 7. Need achievement	.45	.60	.67	.77	.78
8. Authoritarianism scale	.74	.73	.68	.76	.74
9. Interest in foreign languages	.92	.93	.89	.89	.92
✓ 10. Machiavellianism	.62	.51	.73	.67	.77
11. Parental encouragement	.91	.93	.89	.91	.92
✓ 12. Anomie	.65	.54	.41	.52	.51
13. Instrumental Orientation	.85	.84	.84	.80	.81
14. Integrative Orientation	.84	.89	.86	.79	.86
15. Motivational Intensity	.86	.88	.76	.79	.79
16. Desire	.89	.88	.85	.77	.86

TABLE 3

ROTATED FACTOR MATRIX - GRADE 7

	1	2	3	4
1. Attitudes toward French Canadians	.76	.16	.06	.25
2. French Class Anxiety	-.14	-.13	.76	.02
3. Attitudes toward Learning French	.82	.28	-.17	.21
4. General Classroom Anxiety	.17	.17	.71	.01
5. E-scale	-.01	-.55	.40	-.15
6. Attitudes toward European French	.73	-.05	.05	.35
7. Need Achievement	.14	.13	-.33	.32
8. F-scale	.56	-.30	.25	.19
9. Interest in Foreign Languages	.81	.13	-.20	.26
10. Machiavellianism	-.11	-.34	.41	-.26
11. Parental Encouragement	.70	.23	.10	.07
12. Anomie	.38	-.46	.42	-.06
13. Instrumental Orientation	.78	.07	.03	.17
14. Integrative Orientation	.81	.11	.11	.19
15. Motivational Intensity	.72	.29	-.31	.20
16. Desire to Learn French	.76	.31	-.20	.31
17. Orientation Index	.29	.08	-.20	-.01
18. English Canadians (eval.)	.40	.08	-.02	.82
19. French Canadians (eval.)	.32	-.02	.03	.84
20. European French (eval.)	.24	.01	-.19	.31
21. French Course (eval.)	.70	.40	-.09	.33
22. French Teacher (eval.)	.50	.48	-.02	.48
23. French Vocabulary	.28	.44	-.05	.05
24. French Aural Comprehension (I)	.21	.76	-.06	-.02
25. French Aural Comprehension (II)	.07	.73	.06	.05
26. I. Q.	.16	.67	-.04	-.01

TABLE 4

ROTATED FACTOR MATRIX - GRADE 8

		1	2	3	4
1.	Attitudes toward French Canadians	.81	-.13	.18	.08
2.	French Class Anxiety	-.24	.18	-.16	.57
3.	Attitudes toward Learning French	.80	.02	.26	-.22
4.	General Classroom Anxiety	.08	.21	.10	.59
5.	E-scale	-.23	.68	-.06	.08
6.	Attitudes toward European French	.78	-.22	.03	.17
7.	Need Achievement	.52	-.24	.04	-.04
8.	F-scale	.21	.32	-.06	.05
9.	Interest in Foreign Languages	.90	-.08	.06	-.02
10.	Machiavellianism	-.32	.54	-.10	.09
11.	Parental Encouragement	.72	-.06	.06	-.06
12.	Anomie	.10	.57	-.01	.13
13.	Instrumental Orientation	.79	.15	.13	-.05
14.	Integrative Orientation	.87	-.09	.16	.01
15.	Motivational Intensity	.75	.04	.30	-.21
16.	Desire to Learn French	.77	-.01	.27	-.17
17.	Orientation Index	.28	-.11	.32	-.18
18.	English Canadians (eval.)	.67	-.13	.01	.31
19.	French Canadians (eval.)	.69	.05	.02	.35
20.	European French (eval.)	.20	-.19	.13	.25
21.	French Course (eval.)	.84	-.02	.24	.10
22.	French Teacher (eval.)	.60	-.27	.15	.13
23.	French Vocabulary	.46	-.12	.32	.20
24.	French Aural Comprehension (I)	.17	-.10	.83	.11
25.	French Aural Comprehension (II)	.11	-.10	.86	.00
26.	I. Q.	.33	-.41	.20	.24

TABLE 5

ROTATED FACTOR MATRIX - GRADE 9

		1	2	3	4	5
1.	French Canadian Attitudes	.57	.23	.20	-.02	.12
2.	French Class Anxiety	-.33	-.27	-.03	.10	.71
3.	Attitudes toward Learning French	.83	.10	.13	-.21	-.11
4.	General Classroom Anxiety	-.04	-.16	-.18	.11	.70
5.	E-scale	-.06	-.31	.16	.59	.10
6.	Attitudes toward European French	.58	.19	.28	.07	.16
7.	Need Achievement	.22	-.02	.16	-.35	-.09
8.	F-scale	.04	-.24	.41	.56	-.03
9.	Interest in Foreign Languages	.76	.08	.13	-.15	-.20
10.	Machiavellianism	-.18	.04	-.21	.61	.04
11.	Parental Encouragement	.70	.01	-.18	.11	-.06
12.	Anomie	.12	-.11	-.04	.66	.13
13.	Instrumental Orientation	.71	.02	-.10	.20	-.20
14.	Integrative Orientation	.76	.23	-.04	-.08	-.17
15.	Motivational Intensity	.69	-.03	.27	-.26	.03
16.	Desire to Learn French	.79	.10	.11	-.30	.12
17.	Orientation Index	.29	.20	-.13	-.43	.22
18.	English Canadians (eval.)	-.07	.05	.83	-.07	-.13
19.	French Canadians (eval.)	.17	-.00	.84	.04	-.03
20.	European French (eval.)	.34	.19	.70	.02	-.07
21.	My French Course (eval.)	.72	-.09	.25	-.18	-.22
22.	My French Teacher (eval.)	.31	-.17	.38	-.28	-.05
23.	French Vocabulary	.14	.69	-.03	-.14	.02
24.	I. Q.	.15	.64	-.15	-.09	-.23
25.	CATF Vocabulary	.06	.65	.02	-.13	-.09
26.	CATF Grammar	.03	.66	-.02	-.03	-.04
27.	CATF Comprehension	.00	.58	.15	.01	.06
28.	CATF Pronunciation	.08	.53	.08	-.08	-.23

TABLE 6

ROTATED FACTOR MATRIX - GRADE 10

		1	2	3	4	5
1.	French Canadian Attitudes	.52	.20	-.14	.07	.02
2.	French Class Anxiety	-.09	-.41	-.05	.07	.68
3.	Attitudes toward Learning French	.78	.38	-.03	-.05	-.08
4.	General Classroom Anxiety	.03	-.21	.07	-.09	.63
5.	E-scale	-.01	-.09	.62	.09	.33
6.	Attitudes toward European French	.57	-.15	.08	.30	-.11
7.	Need Achievement	.44	.17	-.21	.08	.26
8.	F-scale	.12	-.06	.42	.16	.45
9.	Interest in Foreign Languages	.80	.07	.05	.12	.07
10.	Machiavellianism	-.10	-.03	.56	-.02	-.12
11.	Parental Encouragement	.43	-.20	.17	-.04	-.06
12.	Anomie	.11	.15	.58	-.06	.06
13.	Instrumental Orientation	.61	.03	.44	.02	-.27
14.	Integrative Orientation	.64	.04	.17	-.03	-.24
15.	Motivational Intensity	.74	.27	-.05	.02	.12
16.	Desire to Learn French	.77	.34	-.04	.00	-.02
17.	Orientation Index	.43	.01	-.32	.02	.22
18.	English Canadians (eval.)	-.07	-.07	.05	.83	.00
19.	French Canadians (eval.)	.21	.07	-.05	.64	.05
20.	European French (eval.)	.23	-.22	.01	.83	.01
21.	My French Course (eval.)	.66	.12	.02	.13	.05
22.	My French Teacher (eval.)	.47	.18	-.06	.17	.21
23.	French Vocabulary	.12	.76	.08	-.01	-.18
24.	I. Q.	.04	.40	.01	-.16	-.25
25.	CATF Vocabulary	.18	.75	-.16	-.08	-.10
26.	CATF Grammar	.23	.79	-.08	-.02	.01
27.	CATF Comprehension	.11	.71	-.03	-.02	-.04
28.	CATF Pronunciation	.08	.51	.12	.00	-.08

TABLE 7

ROTATED FACTOR MATRIX - GRADE 11

		1	2	3	4	5
1.	French Canadian Attitudes	.66	.20	.22	.19	-.26
2.	French Class Anxiety	-.06	-.14	.08	.78	.06
3.	Attitudes toward Learning French	.82	.33	-.02	-.15	.09
4.	General Classroom Anxiety	.04	.12	.16	.77	.07
5.	E-scale	-.21	-.16	-.13	.07	.54
6.	Attitudes toward European French	.54	-.02	.49	.18	-.19
7.	Need Achievement	.47	.19	.31	-.25	-.03
8.	F-scale	.09	-.10	.16	.06	.60
9.	Interest in Foreign Languages	.77	.24	.26	-.03	.06
10.	Machiavellianism	-.17	-.21	-.30	.25	.22
11.	Parental Encouragement	.59	-.01	-.05	.11	-.28
12.	Anomie	-.23	-.01	-.19	.29	.43
13.	Instrumental Orientation	.79	-.07	.02	.03	.02
14.	Integrative Orientation	.80	.10	.17	.11	-.20
15.	Motivational Intensity	.67	.37	.09	-.18	.14
16.	Desire to Learn French	.80	.34	.13	-.05	.10
17.	Orientation Index	.44	.11	.03	-.12	-.20
18.	English Canadians (eval.)	.18	-.19	.76	.05	.15
19.	French Canadians (eval.)	.17	.00	.83	.06	-.09
20.	European French (eval.)	-.02	.03	.87	.13	.08
21.	My French Course (eval.)	.73	.15	.11	-.21	.15
22.	My French Teacher (eval.)	.19	.19	.29	-.18	.41
23.	French Vocabulary	.25	.84	-.05	-.03	-.01
24.	CATF Vocabulary	.21	.82	-.03	.03	-.01
25.	CATF Grammar	.23	.83	-.09	-.03	-.10
26.	CATF Comprehension	.17	.67	.10	.03	-.07
27.	CATF Pronunciation	-.02	.64	-.00	-.08	-.07

TABLE 8

SUMMARY OF ANALYSES OF VARIANCE OF THE MAJOR VARIABLES

Variable	F-Ratio	Means Grade 7	8	9	10	11
1. Attitudes toward French Canadians	.83	49.45	49.73	49.11	48.20	51.07
2. French Class Anxiety	2.34	18.21	15.95	17.50	18.35	16.84
3. Attitudes toward learning French	2.41*	49.06	45.76	45.45	43.09	49.09
4. General Classroom Anxiety	1.71	17.74	16.10	17.41	18.15	18.25
5. E-Scale	7.45**	31.18	30.77	29.04	27.37	25.53
6. Attitudes toward European French	5.23**	40.45	43.57	43.15	41.29	45.56
7. Need Achievement	8.77**	43.22	43.50	47.17	45.11	48.84
8. F-Scale	7.69**	41.81	44.60	42.93	38.76	38.60
9. Interest in Foreign Languages	7.02**	45.74	47.88	50.46	48.67	54.68
10. Machiavellianism	5.50**	31.94	32.53	32.00	33.91	28.47
11. Parental Encouragement	1.21	41.28	41.57	42.08	38.61	42.70
12. Anomie	1.28	18.86	18.76	19.23	18.59	17.77
13. Instrumental Orientation	.57	17.28	17.60	17.66	16.75	17.93
14. Integrative Orientation	2.50*	17.94	18.09	18.14	16.99	19.42
15. Motivational Intensity	2.53*	20.50	20.53	21.53	20.54	21.88
16. Desire to learn French	3.84*	21.58	21.02	21.28	20.63	22.98
17. English Canadians (evaluative)	3.87**	43.94	42.17	42.23	40.25	40.28
18. French Canadians (evaluative)	1.92	38.57	39.83	41.49	38.47	39.53
19. European French (evaluative)	1.02	37.82	39.24	40.29	39.08	39.46
20. French Course (evaluative)	4.39**	40.01	37.95	40.76	34.23	39.21
21. French Teacher (evaluative)	7.23**	42.32	40.85	41.34	36.51	45.45
22. English Course (evaluative)	7.15**	46.02	42.22	46.06	40.14	41.42
23. French Vocabulary	442.34**	13.22	14.17	21.10	28.66	37.99
24. CATF Vocabulary	241.58**			10.59	14.10	23.99
25. CATF Grammar	124.97**			13.14	19.36	26.81
26. CATF Comprehension	82.73**			4.03	4.50	7.33
27. CATF Pronunciation	15.07**			6.19	6.80	9.65
28. I. Q.	1.62	64.30	63.03	65.42	65.84	

* $p < .05$

** $p < .01$

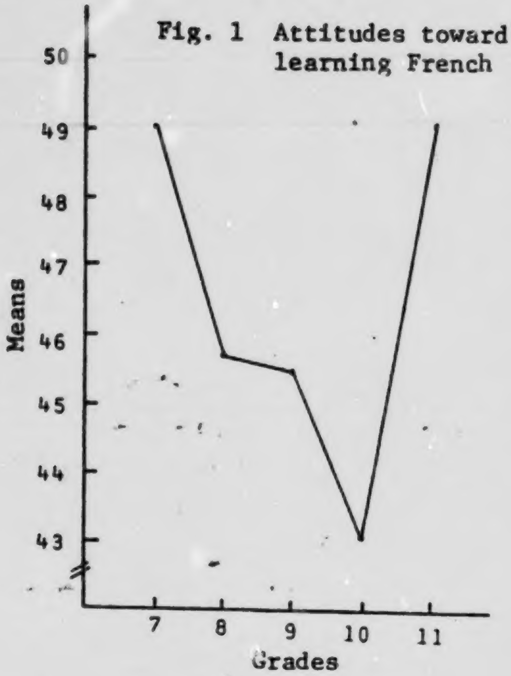


Fig. 1 Attitudes toward learning French

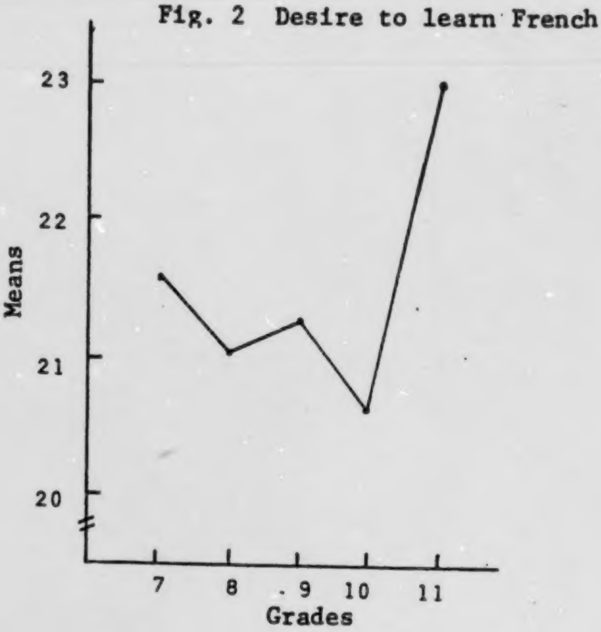


Fig. 2 Desire to learn French

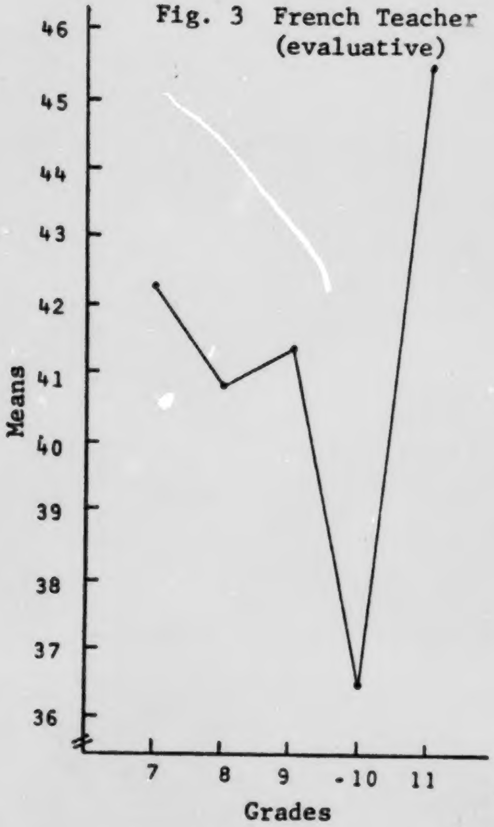


Fig. 3 French Teacher (evaluative)

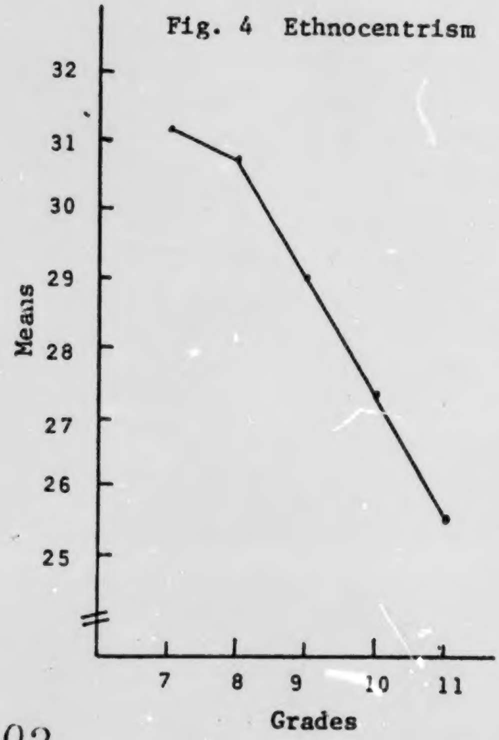


Fig. 4 Ethnocentrism

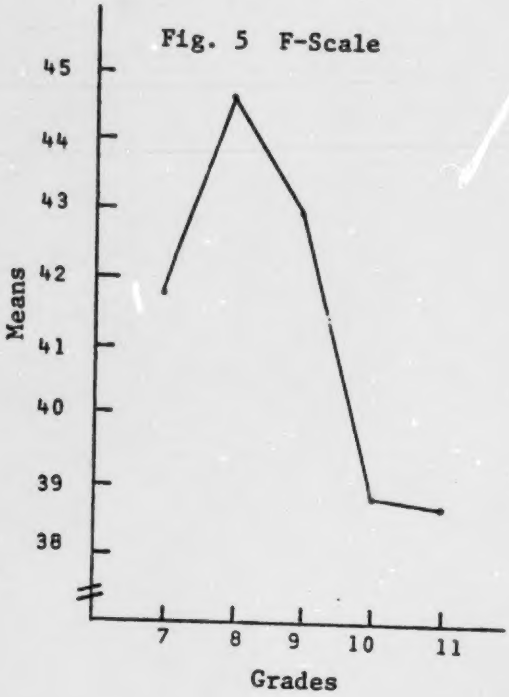


Fig. 5 F-Scale

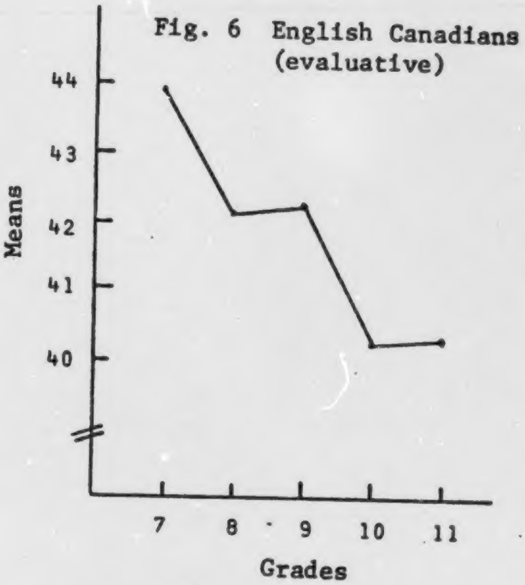


Fig. 6 English Canadians (evaluative)

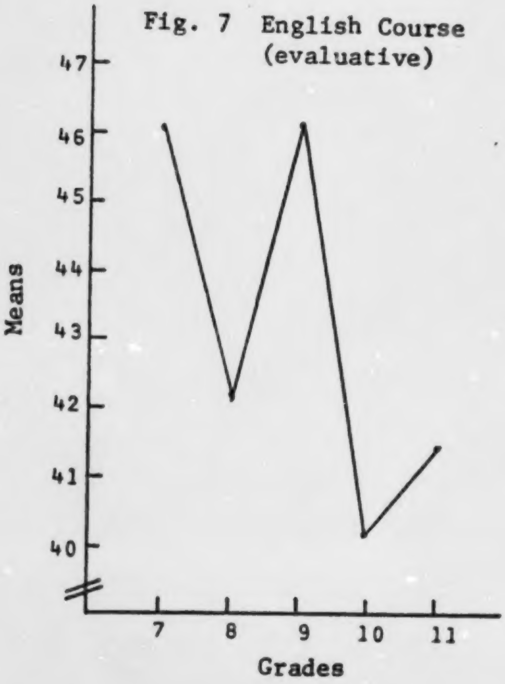


Fig. 7 English Course (evaluative)

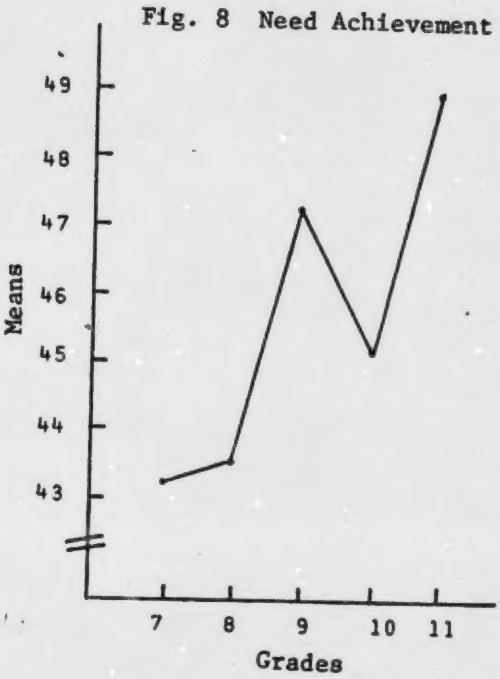


Fig. 8 Need Achievement

Fig. 9 Interest in Foreign Languages

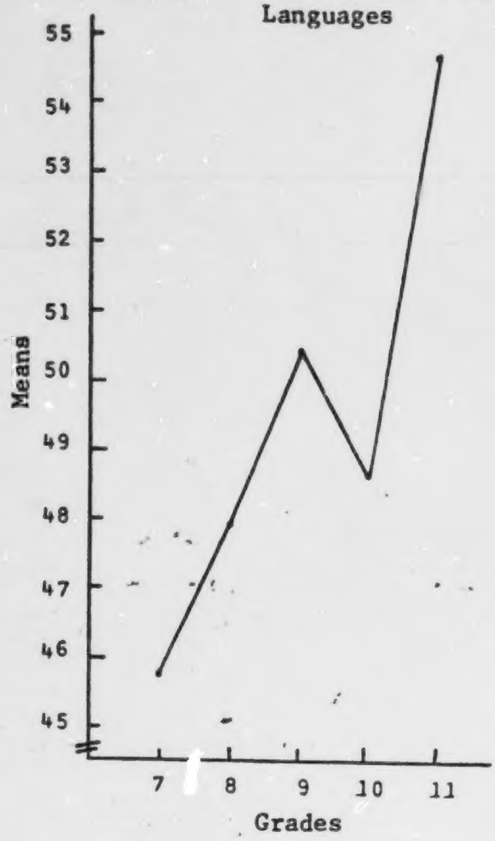


Fig. 10 Motivational Intensity

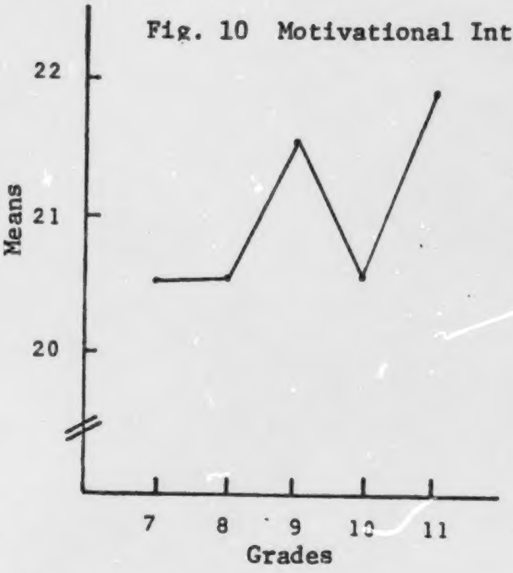


Fig. 11 Integrative Orientation

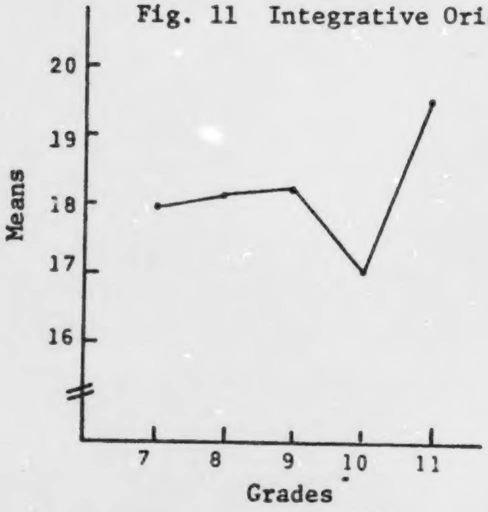
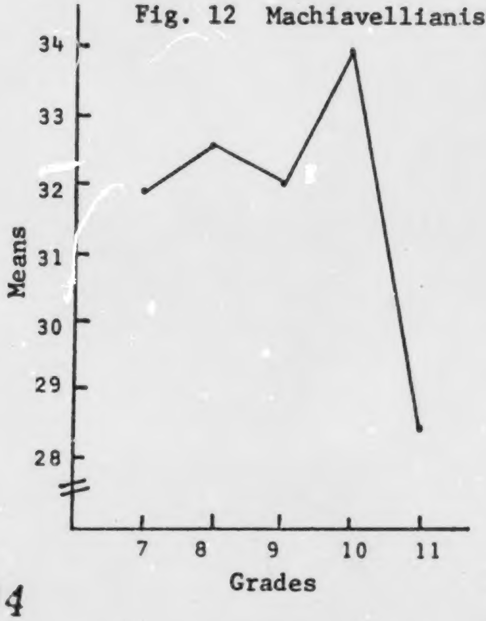


Fig. 12 Machiavellianism



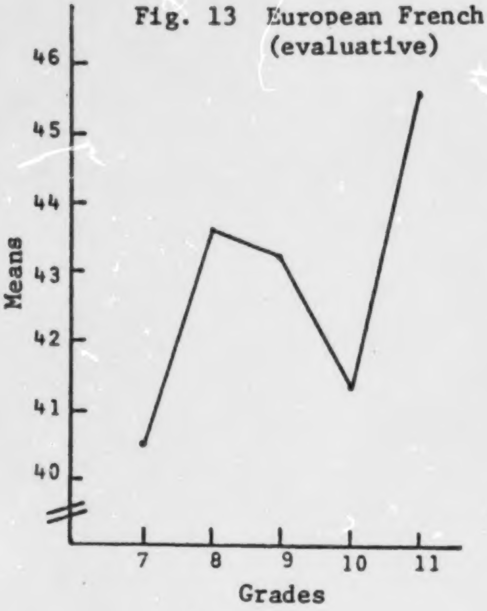


Fig. 13 European French (evaluative)

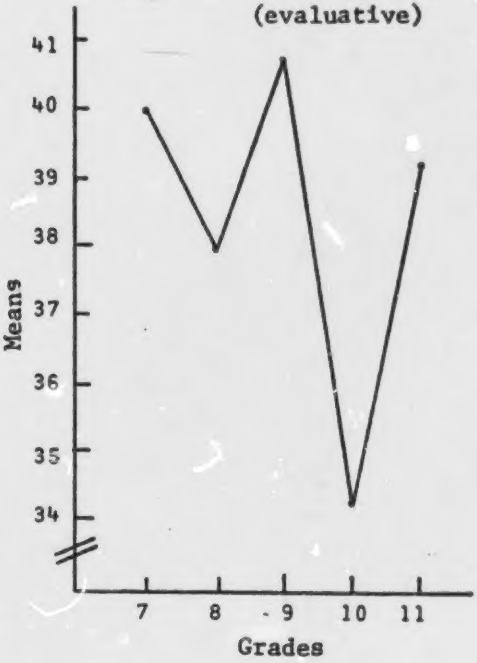


Fig. 14 French Course (evaluative)

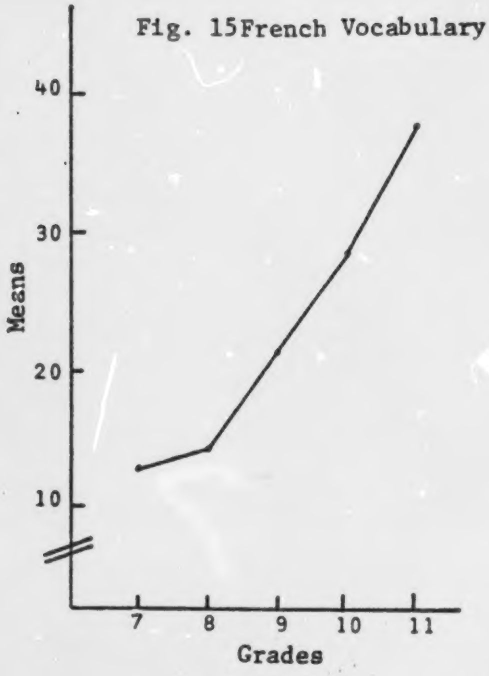


Fig. 15 French Vocabulary

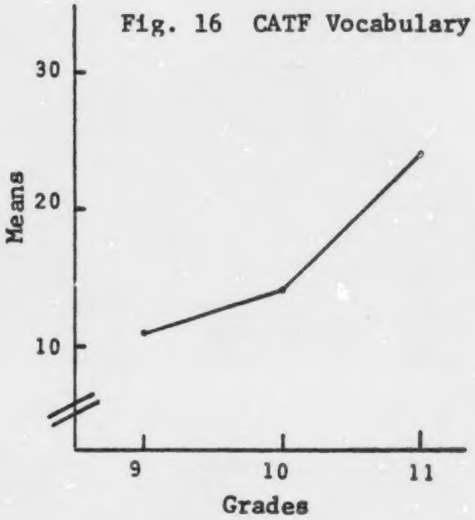


Fig. 16 CATF Vocabulary

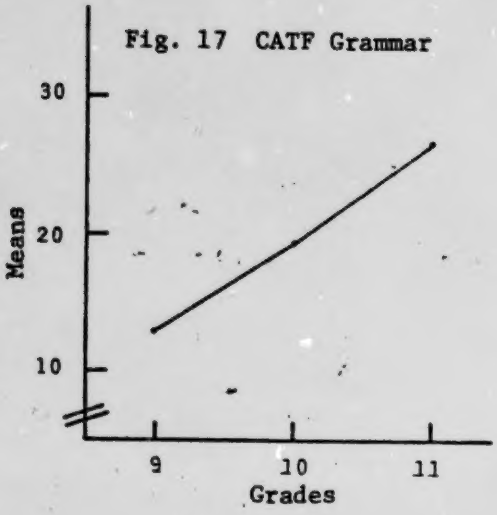


Fig. 17 CATF Grammar

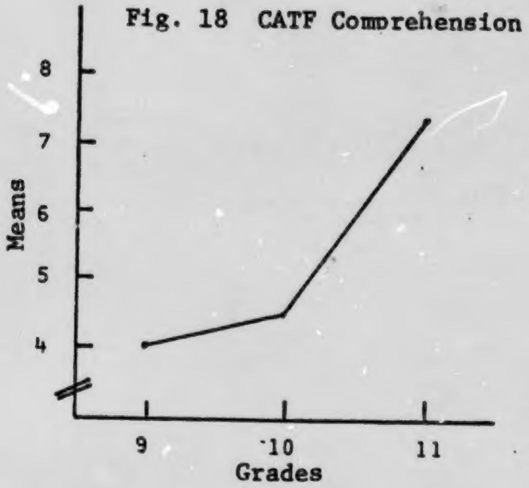


Fig. 18 CATF Comprehension

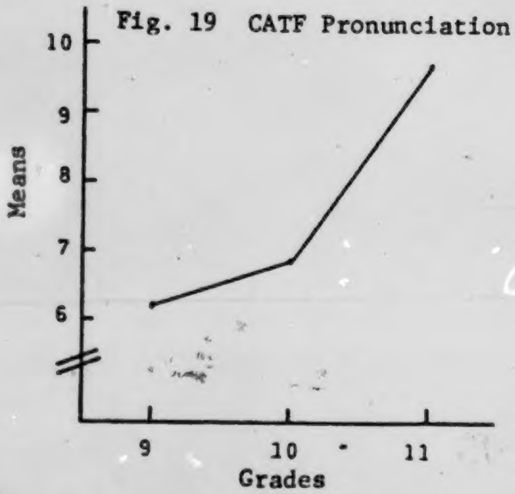


Fig. 19 CATF Pronunciation

CHAPTER 4

APTITUDE, ATTITUDES, MOTIVATION AND ACHIEVEMENT: THE VALIDATION STUDY

Introduction

The major purpose of the extended pilot study described in Chapter 3 was the systematic and rigorous development of a battery of attitude/motivational tests with acceptable levels of internal consistency. The data presented in that chapter suggest that this primary aim was achieved, however, it may be recalled that all of the attitude/motivational indices finally arrived at were based on selected items from the larger initial pool. The question remained, therefore, as to whether the final, foreshortened versions of these various measures would yield similarly high reliabilities. The present chapter addresses itself to this important question and represents an attempt to replicate and validate all of the major findings of Chapter 3 using larger samples of students at each grade level. Thus, as well as re-examining the reliability characteristics of the final attitude/motivational measures, the present chapter also investigates the factor structure at each grade level among all the measures used in the preliminary study and a number of additional variables. These new variables included measures of language aptitude and a series of self- and teacher-ratings of French language skills as well as Ss' intentions of continuing or dropping French studies the following year. Finally, like Chapter 3, the present investigation attempts to chart developmental changes in attitude and motivation, language achievement, and aptitude across the five grade levels. These three objectives were approached in basically the same way as was the case in Chapter 3 and save for the test developmental phase, the organization, analyses, and presentation of results follows the same form.

Considerably larger sample sizes were employed at each grade level in this phase thus permitting a type of analysis not included in Chapter 3.

This new phase of analysis involved the development of a series of predictors of various aspects of French language achievement. To this end, aptitude and attitude/motivational measures were entered into multiple stepwise regression equations with the different French achievement scores being used as criterion measures. This aspect represented an initial step to determine whether it is feasible to develop a composite score involving some combination of the aptitude, attitude, and motivational measures which would more accurately predict subsequent levels of French skills than would any of the measures taken separately.

All of the four objectives of the validation study, a check on the reliabilities of the attitude/motivational tests, the investigation of the factor analytic structures at each grade level, an examination of developmental changes across grade levels, and the development of prediction equations for French language skills will be dealt with in the present chapter. The nature of the subjects sampled, the tests used and the general procedure followed in the validation study are described in some detail in the following section. Results and findings related to each of the four primary objectives will be treated in the Results and Discussion section which will also include a brief but complete description of an ancillary study undertaken to examine the test-retest reliabilities of a selected set of the attitude/motivational scales.

Method

Subjects

The subjects (Ss) for the second phase of the investigation, as in the initial phase were students taking French as a second language in grades 7 to 11 in the London Public School System. The students in grades 9, 10 and 11 were from 3 secondary schools located in three different suburban areas. These schools draw from a wide cross-section of socio-economic classes from both suburban and rural areas. The students in grades 7 and 8 were from 4 elementary schools chosen because of their proximity to the secondary schools. These elementary schools serve as feeder schools to the secondary schools.

The entire sample was comprised of 314 students in grade 7, 265 in grade 8, 329 in grade 9, 338 in grade 10, and 275 in grade 11.

Materials

The materials for this phase of the study consisted of a language aptitude test, a number of paper and pencil measures of attitudinal and motivational characteristics; semantic differential rating scales of various concepts such as school courses, and teachers; self-ratings and teacher-ratings of French language skills; general information about language background, intention to continue French study, and French achievement. Again, as in the initial study, the indices of French achievement used for the different grades had to be varied somewhat. These differences are indicated below. All the other measures, however, were common to the five grades. Following is a list of variables assessed in this investigation. Only those variables new to this phase of the study are described in detail. For a more complete description of the variables used both in this study and the initial investigation, see Chapter 3.

1. Sex. Males coded 1, females coded 2.
2. Drop-out. As part of the testing session in April 1973 Ss were asked "Do you plan to study French next year". They were asked to answer either "Yes", "No" or "Undecided" on the face sheet of the battery for that session. Responses were coded Yes=1, No=2. Undecided was considered as a missing observation. This variable actually reflects a behavioral intention rather than behavior itself but is simply referred to as Drop-out throughout this chapter. Drop-out behaviour, per se, is the topic of Chapter 5.

The following five measures are subtests of the Modern Language Aptitude Test, Form A (MLAT) (Carroll and Sapon, 1959). The MLAT is a standardized paper and pencil test requiring one hour to administer and is designed to measure those linguistic ability factors which are predictive of second language achievement but which are also relatively independent of general indices of intelligence. The subtests are:

3. MLAT Number Learning. This test (15 items) measures both a memory component and a general auditory alterness factor.
4. MLAT Phonetic Script. This test (30 items) provides a measure of both memory for speech sounds and the ability to learn correspondences between speech sounds and orthographic symbols.
5. MLAT Spelling Clues. Scores on this test (50 items) are dependent upon a student's knowledge of English vocabulary as well as the "sound-symbol association ability" noted in the previous subtest.
6. MLAT Words in Sentences. This test (45 items) is intended to measure a students' sensitivity to grammatical structure.
7. MLAT Paired Associates. This test (24 items) is a measure of the students' ability to learn to form associations between pairs of items so that, upon a later presentation of one member of the pair, he can reliably reproduce the second pair member.

The following 15 attitudinal and motivational variables contain only the "potential" or refined items from the original investigation. Descriptions of these scales are found in Chapter 3 and the items themselves are included in Appendix A and indicated with an asterisk.

8. Attitudes toward French Canadians. This scale contains 10 items (see Appendix A, page A - 3).
9. Authoritarianism (F-Scale). This variable consists of 10 items (see Appendix A, page A - 12).
10. Machiavellianism. This variable consists of 10 items (see Appendix A, page A - 14).
11. Need Achievement. This variable consists of 10 items, 4 positively worded and 6 negatively worded (see Appendix A, page A - 11).

12. Ethnocentrism (E-Scale). This scale contains 10 items (see Appendix A, Page A - 8).

13. Interest in Foreign Languages. This scale consists of 10 items (see Appendix A, page A - 13).

14. Parental Encouragement. This variable contains 10 items (see Appendix A, page A - 15).

15. Attitudes toward Learning French. This variable consists of 10 items, 5 positively worded and 5 negatively worded (see Appendix A, page A - 6).

16. French Classroom Anxiety. This scale contains 5 items (see Appendix A, page A - 5).

17. General Classroom Anxiety. This scale consists of 5 items (see Appendix A, page A - 7).

18. Attitudes toward European French People. This variable contains 10 items (see Appendix A, page A - 9).

19. Anomie. This variable consists of 10 items (see Appendix A, page A - 16).

20. Motivational Intensity. This test consists of 10 multiple choice items (see Appendix A, page A - 20).

21. Desire to Learn French. This test contains 10 multiple choice items (see Appendix A, page A - 23).

22. Orientation Index. This measure is identical to that used in the initial investigation (see Appendix A, page A - 26).

Variables 23 - 27 are measures derived from semantic differential (Osgood, et al, 1958) ratings of five concepts, English Canadians, French Canadians, My French Teacher, My English Course and My French Course.

In the list of variables to follow the emphasis as in the previous investigation, is on evaluative reactions. A high score on these variables indicates a positive attitude toward the concept.

23. English Canadians (evaluation). Ss rated the concept English Canadians on 30 semantic differential scales (see Appendix A, page A - 30). Thirteen

of these scales were classified as evaluative based on the norms presented by Kirby and Gardner (1972). Using the criteria described in the previous chapter the thirteen scales, considerate-inconsiderate, dependable-undependable, sincere-insincere, reliable-unreliable, honest-dishonest, pleasant-unpleasant, trustworthy-untrustworthy, good-bad, polite-impolite, cheerful-cheerless, friendly-unfiendly, loyal-disloyal, and kind-cruel, were adjudged evaluative. The evaluation of English Canadians was derived by summing the ratings on these scales.

24. French Canadians (evaluation). Ss rated the concept French Canadians on the same 30 scales (but in a different order) as used above (see Appendix A, page A - 32). The student's evaluation of French Canadians was derived by summing his ratings on the thirteen evaluative scales described above.

25. My French Teacher (evaluation). Ss rated the concept My French Teacher on 30 semantic differential scales (see Appendix A, page A - 35a). This variable was modified from the initial investigation, deleting some scales and adding new ones (see Appendix A, page A - 35b). Eleven scales were considered evaluative based on the judgment of four independent raters. These scales were friendly-unfriendly, reliable-unreliable, good-bad, cheerful-cheerless, considerate-inconsiderate, pleasant-unpleasant, creative-uncreative, efficient-inefficient, police-impolite, sincere-insincere, and dependable-undependable, and were judged evaluative. Ratings on these evaluative scales were summed to provide an evaluative score.

26. My English Course (evaluation). Ss rated the concept My English Course on 30 semantic differential scales (see Appendix A, page A - 33a). This variable was also modified since the initial investigation, having been lengthened, with some scales deleted and new ones added (see Appendix A, page A - 33b). Using the criteria described immediately above, ratings on the seven scales enjoyable-unenjoyable, valuable-worthless, appealing-unappealing, pleasant-unpleasant, nice-awful, good-bad, and pleasurable-painful were summed to provide an evaluative score.

27. My French Course (evaluation). This measure was derived from semantic differential ratings of the concept, My French Course, obtained on the same 30 scales (in a different order) as in the concept, My English Course (see Appendix A, page A - 36a and A - 36b). An evaluative score was obtained by summing the scores on the seven evaluative scales listed above.

28. Integrative-Instrumental Difference Score. This variable was derived from a method described by Smythe, Stennett and Feenstra (1972). Ss were presented with four of the refined items from the initial study stressing the pragmatic or instrumental value of learning French (see Appendix A, page A - 17) and four of the refined items from the initial investigation emphasizing the integrative reasons for learning French (see Appendix A, page A - 18). The difference between the scores on these two scales yielded a single index which would characterize a student as being predominately instrumental or integrative in his approach to studying French. To remove negative values a constant of 25 was added to each score. Thus a high score (maximum value = 49) characterizes an orientation which is relatively more integrative than instrumental, while a low score (minimum value = 1) reflects the converse.

Variables 29 - 32 were measures derived from Ss self ratings on four aspects of French ability (see Appendix B page B - 3) on a seven point scale. The scale had marker words which ranged from "Not at all" at the extreme left end to "Fluently" at the extreme right end. A high score on these variables reflects a student's perception of himself as very adept on these dimensions.

29. Self-rating - Writing. This variable represents a S's rating of himself in response to the statement "I write French".

30. Self-rating - Understanding. This variable represents a student's rating of himself in response to the statement "I understand French."

31. Self-rating - Reading. This measure represents a student's self-rating in response to the statement "I read French."

32. Self-rating - Speaking. This variable represents a S's self-rating in response to the statement "I speak French."

The following seven variables were derived from teacher ratings of students' oral/aural skills (see Appendix B, page B - 1). The French teachers of the students involved in this phase of the investigation rated the students' French achievement on a seven point scale which ranged from "poor" to "excellent". The teachers made their ratings during the last two months of the school year.

A high score on these variables reflects a high level of competence as perceived by the teacher.

33. Teacher-rating - Speaking. This variable was derived from summing teacher-ratings of items 1 (grammatical construction when speaking French), 2 (French pronunciation), 3 (use of French vocabulary when speaking), 4 (fluency of speech in French), 5 (use of full sentences rather than one word or phrase answers) and 8 (ability to make himself understood by the class when he is speaking French).

34. Teacher-rating - Willingness. This variable reflects the teacher's response to item 6 (willingness to participate in French oral discussion) in the first section.

35. Teacher-rating - Understanding. This variable reflects the teacher's rating of item 7 (basic understanding of spoken French) in Section one.

36. Teacher-rating - Oral. This variable was derived from the teacher's response to item 1 (general French ability in oral skills) in the second section of the rating sheet.

37. Teacher-rating - Aural. This variable reflects the teacher's response to item 2 (general French ability in aural skills) in part two of the rating sheet.

38. Teacher-rating - Grammar. This variable reflects the teacher's rating of item 3 (general appreciation of grammatical constructs) in section two.

39. Teacher-rating - Vocabulary. This variable reflects the teacher's response to item 4 (appropriate use of vocabulary) in the second section of the rating sheet.

40. Intelligence. Indices of intelligence expressed in terms of locally developed standardized scores were determined for each student from school records.

The following variables are indices of French achievement, and those indices differed from grades 7 and 8 to grades 9 - 11. In the following, list, the measures of French achievement obtained on the grade 7 and 8 students are described first. These subtests of the French Achievement Test were written or adapted specifically for this investigation in an attempt to provide an aural achievement test which would parallel the senior achievement test but which would not require any reading or writing French skills.

41. French Achievement Test - Vocabulary. This test consisted of 25 items which were considered by the Oral French Consultant to be within the range of the grade 7 and 8 students, but had some more difficult words as well. This test was presented via tape recorder in exactly the same manner as the French Vocabulary test in the initial investigation (see Chapter 3, Variable 23). The higher the score, the greater the French vocabulary knowledge.

42. French Achievement Test - Grammar. This test was constructed specifically for this study with the help of local French consultants. It consists of 10 multiple choice items and was presented in conjunction with a tape recording. Each item consisted of a French sentence, followed by four English translations and was printed in the Ss' test booklets. On the tape recording students heard the item number, and the French sentence read twice. The student was then required to select the English sentence that best translated the French sentence presented and to circle the chosen alternative in his test booklet. A high score indicates a sensitivity to elementary French grammar.

43. French Achievement Test - Sentence Understanding. This test was also written specifically for this investigation with the help of local French consultants. It consists of 13 items designed to measure Ss auditory comprehension of French sentences. Students heard a sentence read twice in French and then had to decide if it made logical sense or not, for example "Voici un garçon; c'est Suzanne." Students indicated their answer by a check mark in the appropriate space in their test booklet. A high score is associated with a high level of auditory comprehension of sentences.

44. French Achievement Test - Paragraph Comprehension. This test consisted of 17 items and was constructed for this study with the aid of local French consultants. In this section the students heard five short stories read twice in French. After each story, the

students were required to answer 3 or 4 English multiple choice questions about the story they just heard. Both the French stories and the English questions were printed in the Ss' test booklets. A high score in this test indicates a good comprehension of aural French.

45. Vocabulary Test. This test consisted of 50 items and was adapted from the Cooperative French test (Greenberg and Spaulding, 1940). It is the same in format and was presented in the identical manner as the French Vocabulary test in the initial investigation (see Chapter 3, Variable 23).

The following four measures are subtests of the Canadian Achievement Tests in French (CATF) (1968) which were administered to the students in grades 9 - 11. The CATF is a standardized paper and pencil test that is normally administered to students as an unpaced test with a one hour time limit. In this investigation, as in the initial one, time limits were imposed on each of the four subtests with the provision that if students completed one subtest before the time limit expired, they could return to earlier subtests. These tests are identical to those described in Chapter 3.

41. CATF Vocabulary. This subtest is a 35 item, multiple choice test for which Ss were allowed 8 minutes to complete as many items as possible. A high score indicates a substantial knowledge of French words.

42. CATF Grammar. This 45 item, multiple choice subtest was given a 12 minute limit. Items include English to French translations and French sentence completion.

43. CATF Comprehension. Ss were presented with three selections of French prose and were allowed 6 minutes to read these passages and to answer 10 questions based on them. This subtest assesses Ss' ability to comprehend written French.

44. CATF Pronunciation. Ss were given 6 minutes in which to answer 12 items designed to measure a knowledge of how French words should be pronounced.

45. Aural Comprehension. This variable was constructed or adapted specifically for this phase of the investigation with the help of local French consultants and consists of three parts. Each subtest was designed to measure a student's

aural French skills rather than his reading or writing ability.

(a) Part one consisted of 10 items and was adapted from the MLA Cooperative Foreign Language Tests (1963). In this section the student heard 3 stories read twice in French. These were not printed in the S's test booklet. Following each story the student was required to answer 3 or 4 multiple choice questions in French which were printed in his booklet. A high score in this section indicates good comprehension of aural French. This test required 7 minutes.

(b) The second section consisted of 10 items and was adapted from tests constructed by London Board of Education French teachers and consultants. Students heard an incomplete French sentence which was not printed in their test booklet read twice. After each stimulus sentence they were required to select from 4 French alternatives printed in their booklet the one that best completed the sentence. A high score on this subtest was again indicative of good aural French comprehension. This test required 5 minutes.

(c) This section was made up of 10 items adapted from tests designed by London Board of Education French teachers and consultants. In this part Ss heard a question asked twice in French and were required to pick the best answer from four French alternatives printed in their test booklet. Again, they did not see the stimulus question in print. A high score in this section indicates a good level of French aural skills. This test required 4 minutes.

Ss' scores on these three subtests were summed to yield a generalized measure of aural comprehension ability.

Procedure

The testing was conducted in four sessions beginning in December 1972 and ending in May 1973. All testing was conducted by members of the research team who had been trained to administer the tests and to deal with possible questions. Some testing was done in the students' classroom and some in larger testing areas allowing more than one class to be tested at once. The first session required one hour, while the other three were each completed within a regular 40 minute class period.

As described in Chapter 3, the face sheet of the two attitude questionnaires was read aloud to the students at the beginning of each session in which they were administered (see Appendix A, page A - 1).

Session 1. The first testing session was conducted for all grade levels (7 to 11) in December 1972 and January 1973. During this session, the Modern Language Aptitude Test was administered.

Session 2. The second testing session was conducted in February 1973. It consisted of the following tests: Integrative Orientation, Instrumental Orientation, Attitudes toward Learning French, Attitudes toward French Canadians, Attitudes toward European French, Authoritarianism, Ethnocentrism, Anomie, Machiavellianism, Need Achievement, Parental Encouragement, Interest in Foreign Languages, French Class Anxiety, and General Classroom Anxiety, During this session students were also asked to complete the General Information Sheet which had three questions concerning language background.

The test booklet presented to the students consisted of the face sheet (see Appendix A, page A - 1), the instructions for the items presented using the Likert procedure (see Appendix A, page A - 2), the items in a fixed random order for the first 13 tests (118 items), and the General Information Sheet (see Appendix B, page B - 4).

Session 3. The third testing session was conducted in April, 1973. The tests administered to all students included Motivational Intensity, Desire to Learn French, Orientation Index, the Self-rating Sheet, Semantic Differential Ratings of the Concepts, English Canadians, French Canadians, My French Course, My English Course and My French Teacher. The French Vocabulary Test was administered to grade 7 and 8 students only. The Aural Comprehension Test was administered in grades 9 to 11 only. At the beginning of this session students were asked to write on the face sheet of their test booklet whether or not they planned to continue their French study.

The test booklet presented to the students consisted of the face sheet (see Appendix A, page A - 1), the instructions for the Motivational Intensity and Desire to Learn French scales (see Appendix A, page A - 19), the items for these scales in a fixed random order, the Orientation Index, the Self-rating Sheet, the Semantic differential instructions (see Appendix A, page A - 27), and the five concepts (in different random orders) to be rated. The grade 7 and 8 students were given the French Vocabulary test.
The grade 9 - 11 students were presented with a second booklet to be completed following the first. It consisted of the Aural Comprehension Test.

When the research team was in the schools during this session they distributed the Teacher-rating forms (see Appendix B, page B - 1) to the classroom teachers with instructions for their use.
Session 4. The fourth testing session was conducted in May, 1973. The grade 7 and 8 students were presented with the test booklet specifically designed for this study while the CATF was administered to the grade 9-11 students.

Following this session completed Teacher-rating forms were collected from the French teachers.

While 45 variables have been described in this section not all measures were included in the various analyses dealt with in the subsequent sections. The variables actually included in any particular analysis will be specified, therefore, before any discussion of the results of that analysis is attempted in the Results and Discussion section.

Results and Discussion

The validation study had four primary objectives and, therefore, this section will be comprised of four parts, the Reliability of the Attitude/Motivation Measures; the Relations of Aptitude and Attitude/Motivation Measures to French Achievement; Developmental Changes in Aptitude, Attitude, Motivation, and French Achievement; and the Prediction of French Achievement.

Reliability of the Attitude/Motivation Measures

Internal-consistency Reliabilities

Item-total correlations and estimates of the internal consistency reliability (i.e. KR_{20} formula) were calculated for each of the following 16 attitude/motivation measures, Attitudes toward French Canadians, Authoritarianism, Machiavellianism, Need Achievement, Ethnocentrism, Interest in Foreign Languages, Parental Encouragement, Attitudes toward Learning French, French Classroom Anxiety, General Classroom Anxiety, Attitudes toward European French People, Anomie, Motivational Intensity, Desire to Learn French, Ratings of Integrative Orientation and Ratings of Instrumental Orientation. The same procedure was followed in calculating these item-total correlations as was used in the initial study and thus each item-total correlation represents the correlation between an item and the total score for the remaining items on that particular scale.

The Kuder-Richardson20 reliability coefficients of the 16 attitude/motivation tests at each grade level are presented in Table 1. Reference to

Insert Table 1 About Here

Table 1 reveals that with the exception of Authoritarianism, Machiavellianism, Need Achievement, Ethnocentrism, Anomie, and Instrumental Orientation (Variables 2, 3, 4, 5, 12, and 16 in Table 1) the reliabilities are quite substantial (i.e., greater than .70) and reasonably consistent across the five grades tested. For the measures of Machiavellianism and Need Achievement it may be noted that the reliabilities at the grade 10 and 11 level are approaching acceptable levels in contrast to the lower values obtained on these scales with the three younger grades. Of the six scales with less than desireable levels of internal consistency, five are measures of more generalized attitudes while only the sixth (Instrumental Orientation, Variable 16 in Table 1) is specifically related to French. What these data suggest is that the characteristics measured by the Authoritarianism, Machiavellianism, Need Achievement, Ethnocentrism, Anomie and Instrumental Orientation scales either may not be particularly appropriate or relevant to students of this age or that the constructs themselves are so complex and multidimensional that a high level of internal consistency cannot be achieved.

Overall, however, the reliability coefficients of the remaining 10 attitude/motivational scales are sufficiently large to permit a substantial degree of confidence to be placed in the assessments provided by these tests. In general these data correspond very well with the results obtained in Chapter 3 and reveal that no particular selective bias was operating to artifically inflate the reliability estimates reported in that chapter.

Test-retest Reliabilities

Since Kuder-Richardson 20 reliability coefficients are based on the internal consistency of the tests, even though they are used to suggest how consistently tests would give similar results when used repeatedly, it was imperative that we study the reliability of the tests in greater detail. To this end, a study was undertaken to determine the stability over time of scores on a majority of the attitude/motivation tests. Because of time considerations it was necessary to shorten the attitude/motivation battery so that it could be administered within a single class period. To this end some of the less promising tests (e.g., those with particularly low indices of internal consistency or those that appeared to be theoretically less relevant to the central thesis of the project) were deleted and a new battery containing 13 scales, and the appropriate instructions with the items in a fixed random order was created. A second version of the battery with the items in a different fixed random order was also produced for the re-test application. The scales included were: Attitudes toward French Canadians, Need Achievement, Ethnocentrism, Interest in Foreign Languages, Parental Encouragement, Attitudes towards Learning French, French Classroom Anxiety, Attitudes towards European French People, Motivational Intensity, Desire to Learn French, Orientation Index, Integrative Orientation, and Instrumental Orientation.

Approximately 50 Ss in each of grades 7, 8, 9, 10, and 11 attending schools in Chatham, Ontario were administered the first version of the battery in early December, 1973. The second version of the battery was given to these same classes after a six week interval in late January, 1974. The removal of data for Ss who were not present on both testing occasions resulted in the following sample sizes; grade 7 - 37 Ss, grade 8 - 43 Ss, grade 9 - 53 Ss, grade 10 - 50 Ss, and grade 11 - 46 Ss.

Total scores on each of the 13 scales for the two test sessions were correlated separately for each grade level and the resulting estimates of test-retest reliability are presented in Table 2. Note that the entries for the

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Insert Table 2 About Here

Orientation Index (Variable 11 in Table 2) are phi coefficients as this is a dichotomous variable while all other entries are Pearson product-moment correlations. Only one coefficient out of the 65 contained in Table 2 failed to reach at least the 5% level of significance. This exception occured with the Orientation Index for the grade 7 sample.

The French Classroom Anxiety scale for the grade 7 Ss yielded a correlation coefficient that was significant at the 5% level and all other scales at all grades produced test-retest reliabilities that were significant at $p < .01$ or better. To be sure, there is considerable variability in the test-retest reliabilities among the various scales and across the grade levels. Nonetheless, these estimates of stability over time are a particularly encouraging addition to the reliability data presented in Chapter 3 and in Table 1 of the present chapter.

When the data of Tables 1 and 2 are compared it becomes obvious that those scales which have the highest levels of internal consistency reliability also tended to yield the higher test-retest reliabilities. In general, it seems safe to conclude that the levels of both the KR_{20} indices and the test-retest reliability coefficients are sufficiently high to provide relatively stable measures of the underlying characteristics.

Relations of the Aptitude and Attitude/Motivation Measures to French Achievement

A large number of different classrooms was tested at each grade level, so prior to computing the correlations and performing the factor analyses all variables except the dichotomous ones (i.e., Sex, Drop-out, and Orientation Index, Variables 1, 2, and 22) were transformed to standard scores. The standardization process was carried out separately on the data gathered within each individual grade level in each school so that when these data were combined for the grade-level analyses individual S's scores, expressed in standard score form, would be comparable to those obtained from Ss in the same grade but who were in other schools. It was felt that between school differences might result from such influences as different curricular emphases and teaching methods or because of different levels of teacher expectancies (i.e., grading standards). Such differences might be reflected for example, in the several ratings teachers made of each S's level of French skills. It should be noted, however, that if no school differences existed, this transformation would not alter the data. Results of the analyses at each grade level are discussed separately in the following section and the actual variables included in each analysis are presented in the appropriate factor matrices.

Grade 7

Pearson product-moment correlation coefficients were computed among the 45 variables assessed on the grade 7 students. Since variables 1 (Sex), 2 (Drop-out) and 22 (Orientation Index) are dichotomous measures, the correlations among these three measures are phi coefficients; their correlations with each other variable are point-biserial coefficients. The correlation matrix is presented in Appendix D, page D - 1. This matrix was factor analysed using a principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. Six factors, accounting for 85% of the total estimated communality were obtained, and rotated by means of the Varimax solution (Kaiser, 1958). The rotated factor matrix is presented in Table 3.

Insert Table 3 About Here

Factor I obtains appreciable (i.e., greater than ± .30) loadings from eight variables, the seven ratings made by the teachers of the students' French skills (Variables 33-39), and the students perception of his own anxiety in the French classroom situation (Variable 16). This latter variable loads negatively on this factor suggesting that students who are perceived by their teachers as being competent in all aspects of French tend to be relaxed in the French classroom situation. On the other hand, students who report that they are anxious in their French classes, are perceived by the teachers as having little in the way of French skills. Since the predominant characteristic of this factor is the teacher's ratings of French proficiency this factor seems best labelled as a School French Achievement factor; the suggestive loadings of Variables 41 and 44 (French Achievement Test, Vocabulary and Paragraph Comprehension) indicate some overlap in the teachers' ratings and objective indices of French achievement. Similar findings of only minimal agreement between teachers' observations and objective measures have been reported in at least one other study (Gardner and Lambert, 1965).

Factor II is defined by 13 variables, and appears to reflect the by now familiar Integrative Motive dimension. Students who are highly motivated to learn French (Variables 20 and 21) evidence favourable attitudes toward French Canadians (Variables 8 and 24) and European French people (Variable 18), hold favourable attitudes toward learning French (Variable 15), the French course and the French teacher (Variables 27 and 25), report parental encouragement for studying French (Variable 14) and express an interest in foreign languages (Variable 13). These students report furthermore that they plan to continue in the French program next year (Variable 2), and feel that they have some proficiency in understanding and speaking French (Variables 30 and 32).

Although there is no representation on this factor from the various objective measures of French achievement, the inclusion of the variables, Drop-out, Self-rating of French understanding and self-rating of French-speaking skills seems particularly important. The two self-rating variables might not be viewed as a strong indication of French achievement given that the students are only in their first year of French instruction, but it is interesting that the integrative motive mediates perceptions of competence in understanding and speaking French. The implication is that the young student who is motivated to learn French because of favourable attitudes toward French speaking people, the course, and the teacher perceives some value in the French he has acquired particularly as a means of communicating with French speaking people. Possibly of greater significance, however, is the finding that the integrative motive is highly related to the behavioural intention of continuing in the French program. Integratively motivated students plan to continue studying French; those who are not so motivated would like to withdraw from the program. This link between attitudinal variables and second-language acquisition would seem to be the key to the rôle that attitudinal-motivational variables play. It has long been argued (Gardner, 1958; 1966) that the motivation to learn a second-language must be more than just a "motivation to learn a language"--that it must involve a desire to acquire the language of a valued second-language community for communicational purposes in order to maintain the student's interest in the time consuming task of acquiring the language. As demonstrated here, the integrative motive is directly related to the student's intention to continue with the program, and by continuing the student actually acquires the skills. Chapter 5 in this book demonstrates the role of the integrative motive in determining whether the student in fact continues in the program.

Factor III is comprised of a combination of aptitude, attitude and French achievement measures, being defined by 15 variables. Appreciable loadings are obtained by the five subtests of the MLAT (Variables 3 - 7), the measure of intelligence (Variable 40), and four indices of French achievement (Variables 41, 42, 44 and 45). It seems best therefore to define this as a French Achievement factor, though it is clear that it also reflects a strong aptitude component. The other variables contributing to this factor indicate the role of attitudinal variables on this dimension. A high level of French Achievement is related to favourable attitudes toward French Canadians (Variable 8) a strong need to achieve (Variable 11), a lack of anxiety in the French class (Variable 16), a non-ethnocentric orientation to outgroups (Variable 12) and a non-manipulative orientation toward others (Variable 10).

Eight variables define factor IV, and although there are no contributions made by any of the French achievement measures, the pattern reflects a peculiar pattern of attitudinal measures. It seems best to define factor IV as a general authoritarianism/ethnocentrism dimension in that high positive loadings are obtained by the measures of authoritarianism, ethnocentrism and anomie (Variables 9, 12, and 19 respectively). In keeping with the terminology of Chapter 3, this factor may be labelled an Ethnocentrism factor. Other measures contributing to this factor, however, indicate that students scoring high on this dimension also express favourable attitudes toward French Canadians and European French people (Variables 8 and 18), express an interest in foreign languages (Variable 13) and perceive that their parents encourage them to study French (Variable 14). Such students also report a relatively high level of General Classroom Anxiety (Variable 17).

Factor V is defined by nine variables. The major characteristic of this factor appears to be one of French Achievement both as perceived by the student (Variables 29 - 32) and as assessed objectively (Variables 41, 43, and 45). It seems logical to differentiate this factor from factors I and III in that it represents students' Self-Perceptions of French Achievement. The only non-achievement measures included on this factor are the indices of motivational intensity and desire to learn French (Variables 20 and 21) indicating the important role that motivational variables play in determining such achievement. It is perhaps noteworthy that there appears to be more congruence between the students' self-ratings of their French skills and objective measures of those skills than was found for the relationship between teacher ratings and the objective tests described in Factor I. The positive, marginal loading of Ss' evaluative reactions to the French Course (Variable 27) is suggestive that Ss who rate their own French skills highly, also tend to have a favourable reaction to the course.

Five variables define factor VI. This dimension appears to reflect primarily a Sex factor as indicated by the high loading of Variable 1. The nature of the scoring of this variable is such that high scores on this factor are characteristic of girls; that is girls tend to be somewhat more anxious in the French class (Variable 16) as well as in school in general (Variable 17), to have more favourable impressions of English Canadians (Variable 23) and to express a more positive evaluation of their English course (Variable 26). No other variables contribute to this factor.

Grade 8

The correlations among the 45 measures obtained on the grade 8 students are presented in Appendix D, page D - 2. This matrix was factor analysed using the principal axis solution with the highest correlation for a variable serving as its communality estimate. Six factors which accounted for 87% of the total estimated communality were obtained with eigenvalues greater than 1.0 and these were rotated by means of the Varimax solution. The rotated factor matrix is presented in Table 4.

Insert Table 4 About Here

Factor I obtains appreciable (i.e., greater than ± .30) loadings from 14 variables. As in the case of the grade 7 results, the primary characteristic of this factor appears to be School French Achievement as indicated by the high loadings obtained by the seven teacher ratings of French skill (Variables 33 - 39). Unlike the grade 7 results, however, there is a clear indication in the present instance that teacher ratings are reflected in the students' performance on objective measures of French achievement (Variables 41, 42, 44 and 45) indicating that with the opportunity provided by time to actually acquire some second-language skills, teachers' evaluation of competency and actual knowledge of the second language are highly related. This pattern, as we shall see, becomes more pronounced as students progress in second language learning. Like the grade 7 results, on the other hand, the students' perceptions of their own competencies are still not strongly related to their teachers' perceptions, or for that matter objective indices (note the relatively low loadings of Variables 29 - 32). By the grade 8 level then, School French Achievement is clearly defined by teachers' perceptions and objective measures. Other variables contributing to this dimension suggest that School French Achievement is related to a behavioural intention to continue in the French program the following year (Variable 2), a high degree of motivational intensity (Variable 20), and favourable attitudes toward the course (Variable 27). No other variables contribute substantially to this factor, although the Desire to Learn French scale (Variable 21) does obtain a positive marginal loading.

Thirteen variables define factor II, which clearly reflects the Integrative Motive. High scorers on this dimension tend to hold favourable attitudes toward French Canadians and European French people (Variables 8 and 18), toward learning French (Variable 15), and toward their French course (Variable 27), are interested in foreign languages (Variable 13), report considerable parental encouragement to study French (Variable 14), are highly motivated to learn French (Variables 20 and 21), and perceive integrative reasons for studying French as more characteristic of themselves than instrumental reasons (Variables 28, and see also Variable 22). Furthermore, such integratively motivated students tend to be non-exploitive of others and generally non-ethnocentric (Variables 10 and 12), and to be somewhat superior in French reading comprehension (Variable 44). This latter variable is particularly significant since reading comprehension is not part of the French curriculum at this stage of training so that superior performance on this test is indicative of skills developed in addition to the curriculum. The negative, marginal loading of the intention to drop-out (Variable 2) is suggestive that integratively motivated Ss are less likely to report that they plan to cease their French studies. Finally, the loading of Variable 1 (Sex) indicates that in general girls tend to score higher on this dimension than boys.

Factor III clearly represents a Language Aptitude dimension. High loadings are obtained from the five MLAT subtests (Variables 3 - 7), as well as the intelligence measures (Variable 40) and three objective measures of French achievement (Variables 41, 42, and 45). Although this factor describes the aptitude component, it also receives positive loadings from the measures of Attitudes toward French Canadians (Variable 8) and Need Achievement (Variable 11) and negative loadings from the two indices of anxiety (Variables 16 and 17). This configuration would appear to indicate that students who have favourable attitudes towards French Canadians, a high need achievement and who are low in anxiety tend to perform better on the language aptitude and intelligence measures, and to be somewhat superior on some aspects of French achievement.

Only three variables define factor IV. Students obtaining high scores on this factor obtain high scores on the California F-scale, the Ethnocentrism Scale, and the Anomie Scale (Variables 9, 12, and 19), indicating that this is best identified as an Ethnocentrism Factor. No other variables contribute substantially to this dimension.

Factor V obtains appreciable loadings from eight variables. The major component identified by this factor appears to be Self-Perceptions of French Achievement as indicated by the high loadings of Variables 29 - 32. Other variables contributing to this dimension include the measures of Motivational Intensity, Desire to Learn French, Attitudes toward Learning French, and evaluations of the French course (Variables 20, 21, 15 and 27 respectively). This configuration clearly indicates that self-perceptions of French achievement are mediated by a strong motivation to learn French which is associated with favourable attitudes toward learning French and toward the course itself.

Factor VI is of little interest to the present discussion. It appears to reflect largely method variance associated with the semantic differential methodology. Appreciable loadings are obtained by all of the measures involving the semantic differential (Variables 23 - 27), and consequently the factor contributes nothing of any significance to the present investigation.

Grade 9

The correlations among the 45 measures made on the grade 9 students are presented in Appendix D, page D - 3. This matrix was factor analysed using the principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. Six factors which accounted for 87% of the total estimated communality were obtained with eigenvalues greater than 1.0 and these were rotated by means of the Varimax solution. The rotated factor matrix is presented in Table 5.

Insert Table 5 About Here

Twelve variables define Factor I. Since the major loadings are obtained by the seven ratings of French proficiency made by the teachers (Variables 33 - 39), it seems best to define this factor as the School French Achievement dimension. The high loading of the Aural Comprehension measure (Variable 45) indicates that there is some overlap between the teachers' perceptions and objective measures, though like the grade 7 results and unlike the grade 8 findings, this overlap is not pronounced. It seems possible that this minimal overlap is due to the fact that the program in grade 9 much like the case in grade 7, involves the acquisition of new skills, and because of this students are not sufficiently skilled in French to provide the teachers with much information on which to evaluate them. Intelligence (Variable 40), Motivational Intensity and Desire to Learn French (Variables 20 and 21) also contribute to this factor indicating that these variables are highly related to teachers' perceptions of French achievement. One additional variable contributing to this factor is the behavioural intention to withdraw from the program (Variable 2) which is negatively related to the factor, indicating that students who are perceived as competent in French tend to plan to continue in the program.

Factor II is clearly the Integrative Motive dimension. It receives high loadings from 11 variables. The loadings for ten of them are positive. In decreasing order of magnitude the variables are Interest in Foreign Languages, Attitudes toward Learning French, Attitudes toward French Canadians, Attitudes toward European French people, Desire to Learn French, Evaluation of the French Course, Parental Encouragement, Motivational Intensity, Evaluation of the French Teacher, and Need Achievement (Variables 13, 15, 8, 18, 21, 27, 14, 20, 25, and 11 respectively). This configuration is negatively related to the behavioural intention to drop out of the course (Variable 2) indicating relationship similar to that obtained in Grade 7. This pattern suggests, once again, that the integrative motive is important because it motivates students to continue studying French.

Factor III is defined by seven variables, and seems best identified as an Ethnocentrism dimension. Positive loadings are obtained by six variables, Authoritarianism, Machiavellianism, Ethnocentrism, French Classroom Anxiety, General Classroom Anxiety, and Anomie (Variables 9, 10, 12, 16, 17, and 19), while a negative loading is obtained by the measure of Need Achievement (Variable 11). Although an Ethnocentrism dimension was also obtained for both grades 7 and 8, the composition is considerably more complex for the grade 9 students. Reasons for the additional variables on this factor are not readily apparent, but again this component shares no variance in common with the indices of French achievement, and so is of little importance to the present discussion.

Factor IV is the, by now familiar, Self-perceptions of French Achievement dimension. High loadings are received from the four self-ratings of French achievement (Variables 29 - 32) as well as the measure of French Aural Comprehension (Variable 45) indicating that the major component tapped by this factor is French Achievement as indexed largely by self-perceptions but also, to some extent, by objective measures. Other variables contributing to this dimension show important correlates of such self-perceptions. Students who perceive that they are knowledgeable about French plan to continue in French, express favourable attitudes toward learning French and also toward the French Course, feel little anxiety in the French classroom situation, and exhibit considerable motivation and desire to learn French (Variables 2, 15, 27, 16, 20 and 21 respectively). This pattern is similar in many respects to that obtained in both grade 7 and grade 8, except that a few more variables are present, indicating that these variables may play a role in determining the perceptions that students in grade 9 have about their own competencies in French.

Factor V is clearly a Language Aptitude dimension. High positive loadings are obtained by the five MLAT subtests (Variables 3 - 7) indicating that a major component of this dimension is one of language ability. Since all of the remaining variables contributing to this dimension are indices of French achievement, it is clear that Language Aptitude contributes substantially to differences in French achievement at the grade 9 level. These indices of French Achievement include six of the seven teacher ratings of French skill and all five objective measures of French proficiency. The absence of the four self-ratings of French skills indicates, however, that Language Aptitude does not mediate such perceptions. Nevertheless, with respect to the other indices of French achievement, it is clear that Language Aptitude is an important determinant of French achievement at the grade 9 level.

Eleven variables define Factor VI. High negative loadings are obtained from two variables, Machiavellianism and I.Q. (Variables 10 and 40), while positive loadings are obtained from 10 measures, Sex, Attitudes toward French Canadians, Motivational Intensity, Desire to Learn French, Orientation Index, Evaluations of English Canadians, French Canadians, and the French Course, and the Integrative-Instrumental Difference score (Variables 1, 8, 20, 21, 22, 23, 24, 27 and 28). A major aspect of this dimension appears to involve a general favourable orientation toward specific groups (English Canadians, and French Canadians) and a concomitant interest in learning French largely for integrative reasons. The positive, marginal loading of the Attitudes Toward European French people (Variable 18) tends to support this interpretation. The presence of Variable 1, Sex, on this dimension suggests that this pattern is generally characteristic of girls, hence this factor seems best defined as a Sex factor. The overall configuration indicates, however, that at the grade 9 level, many of the sex differences in favour of girls are reflected in the attitudinal reactions described as well as favourable perceptions of the French course, a non-machiavellian orientation, and lower intelligence. These Sex related characteristics, however, are not manifest in different levels of French achievement.

Grade 10

The correlations among the 45 measures administered to the grade 10 students are presented in Appendix D, page D - 4. A principal axis factor analysis of this matrix, with the highest absolute correlation for a variable serving as its communality estimate, yielded six factors accounting for 84% of the total estimated communality. This factor matrix was rotated by means of the Varimax procedure, and the resultant matrix is presented in Table 6.

Insert Table 6 About Here

Factor I is defined by 21 variables, the predominant characteristics of which seem to reflect a dimension of School French Achievement. As was the case for each of the preceding grades, the highest loadings are obtained by the seven teacher ratings of French proficiency (Variables 33 - 39). On this factor, however, the contribution of the objective indices of French achievement (Variables 41 - 45) is much more pronounced than in the previous analyses indicating that at this level teachers' assessments are more closely associated with objective performance. A similar pattern, though not as pronounced or as consistent emerged at the grade 8 level indicating that this correspondence required some considerable experience on the part of the students with a particular curriculum suggesting that it is only after students have the opportunity to truly develop second language skills that teachers have sufficient material on which to base their judgments. It is particularly noteworthy too, that for the first time students' perceptions of their own French skills begin to evidence themselves on this dimension. A moderate loading is obtained by the student's self-rating of his ability to write French (Variable 29) while suggestive loadings are achieved by the other self-rating measures (note the loadings of Variables 30 - 32). Such results suggest that by the grade 10 level, students are beginning to develop sufficient competence in French that individual differences in such competency are discernible by teachers, objective indices and even to some extent by the students themselves.

This change in the composition of School French Achievement is also evident in the non-achievement measures associated with it. As was true of the earlier analyses, intention to withdraw from the French program (Variable 2) is negatively related to this factor indicating an obvious conclusion that those who are performing well in school French tend to plan to continue in the program. Desire to Learn French (Variable 21) contributes positively to this dimension (as it did in grade 9) as well as attitudes toward learning French (Variable 15) demonstrating that a favourable orientation toward French instruction promotes satisfactory performance. For the first time, however, the measure of intelligence and four of the five language aptitude measures also contribute to this dimension (Variables 40, 3, 4, 6 and 7 respectively) indicating that such intellectual variables are becoming of greater importance to School French Achievement.

Factor II is the recurring Integrative Motive dimension, except that the desire for integration with the French speaking community is now more pronounced. High loadings are achieved by the eight tests which have defined this factor in each of the previous analyses. These include the measures of Motivational Intensity and Desire to Learn French, Attitudes toward French Canadians and European French People, Parental Encouragement, Interest in Foreign Languages, Attitudes toward Learning French, and evaluations of the French Course (Variables 20, 21, 8, 18, 14, 13, 15 and 27 respectively). Similarly, intention to drop out of the program (Variable 2) is negatively related to this dimension as it was for the younger grades. Furthermore, as was the case in grade 8, Sex, and the Integrative-Instrumental Difference score (Variables 1 and 28) are positively related to this dimension while Machiavellianism (Variable 10) is negatively related. For the first time, however, the Orientation Index (Variable 22) loads on this dimension (positively) indicating that students who actually select integrative reasons for studying French as being the most characteristic of themselves are highest in this attitudinally based motivation to learn French. It will be noted, moreover, that the intention to drop out of the French program is again negatively related to the Integrative Motive indicating that the importance of this dimension resides in orienting students to continue in their attempts to learn French.

Factor III is extremely similar to a factor obtained for the grade 8 sample. High loadings are obtained by only three variables, authoritarianism, ethnocentrism, and anomie (Variables 9, 12, and 19), and consequently this factor seems best identified as an Ethnocentrism dimension. As was true for the grade 8 sample, no other variables contribute appreciably to this dimension indicating that at the grade 10 level, Ethnocentrism is relatively independent of any of the other variables in the matrix. However, the negative, marginal loading of Machiavellianism (Variable 10) suggests that the ethnocentric student may also tend to be manipulative in his relations with others.

Factor IV is clearly a Self Perceptions of French Achievement dimension. The highest loadings are obtained by the four self-rating measures (Variables 29 - 32), though the two other variables defining this factor are both measures of French achievement (Variables 41 and 45). A similar factor has been obtained for each of the previous grades except that in the present instance none of the attitudinal variables contribute substantially to this dimension. This is unique to grade 10. In each of the previous analyses, individual differences in Self-Perceptions of French Achievement were related to attitudinal measures, in particular the indices of motivation. In the present solution, Motivational Intensity, Desire to Learn French, and evaluative reactions to the French course (Variables 20, 21, and 22) obtain only marginal positive loadings on this factor.

Factor V is defined by only two variables, the two measures of anxiety (Variables 16 and 17). No other variables contribute to this dimension so that although it reflects an Anxiety component, it is not related to any of the other variables included in the matrix.

The definition of Factor VI is not clear. High loadings are obtained by four of the five variables involving semantic differential ratings (Variables 23, 24, 25 and 27) suggesting that a large component of variation isolated in this factor is concerned with method variance associated with the semantic differential. This interpretation is inconsistent, however, with the appreciable positive loading obtained by the index of Motivational Intensity (Variable 20) and the moderate positive loading of Desire to Learn French (Variable 21). Another possibility is that the factor reflects a general evaluation of the French Course and related concepts which is associated with individual differences in the motivation to learn French, but the configuration is not sufficiently well delineated to strongly support such an interpretation. It seems best, therefore, to forego further speculation about this factor.

Grade 11

The matrix of correlations among the 45 variables administered to the grade 11 students is included in Appendix D, page D - 5. This matrix was factor analysed using the principal axis solution with the highest absolute correlation for a variable serving as its communality estimate. As with the previous grades, six factors were obtained with eigenvalues greater than 1.0 and these factors accounted for 86% of the total estimated communality. This factor matrix was rotated using the Varimax criterion (see Table 7).

Insert Table 7 About Here

Twenty-two variables define Factor I. By far the greatest number of these variables have to do with French achievement either as perceived by the students themselves (Variables 29, 30, and 32), by the teachers (Variables 33 - 39), or objectively assessed (Variables 41 - 45). Such a heavy concentration of French achievement indices would suggest that Factor I be identified simply as a French Achievement dimension, however, in keeping with the analyses for the previous grades, this dimension is labelled as School French Achievement. This definition seems appropriate because the highest loadings are obtained by the teacher ratings, and the general composition of the factor is comparable to the similar factors obtained earlier. Consideration of this dimension across the five grades reveals that there is a general growth in the importance of the other indices of French achievement from grades 7 to 11. It is only at grade 11, however, where the self-perceptions of French achievement are clearly associated with this dimension. The implication is, that with further training or experience with French, individual differences in French achievement become so pronounced that they are discernible regardless of the basis of the assessment. Simply put, some students acquire a sound knowledge of French, others don't--and such differences are eventually identifiable by the student, the teacher, and objective measures.

From the other measures contributing to the School French Achievement factor, correlates of individual differences on this dimension are suggested. Students who excell in school French, relative to those who do not, are more intelligent (Variable 40), have more language learning ability (Variables 4, 6, and 7), have a more favourable attitude toward learning French (Variable 15), are less anxious in the French classroom (Variable 16), and are intending to remain in the French program (Variable 2).

The Integrative Motive is again reflected in Factor II. High loadings are received from 15 variables. The eight measures which have consistently defined this factor are still important, viz., Attitudes toward French Canadians, Interest in Foreign Languages, Parental Encouragement, Attitudes toward Learning French, Attitudes toward European French people, Motivational Intensity, Desire to Learn French, and evaluations of the French Course (Variables 8, 13, 14, 15, 18, 20, 21, and 27). As was the case for the grade 10 solution, the Orientation Index (Variable 22) loads positively on this factor once more demonstrating that Ss who are high on other components of the Integrative Motive Factor do endorse integrative reasons relatively more strongly than instrumental ones when faced with a forced-choice question. The remaining six variables which contribute to this dimension have appeared on this factor in some previous grades and they help to delineate the characteristics of the integrative motive at the grade 11 level. At this grade, students with a heightened integrative motive favour integrative as opposed to instrumental reasons in their study of French (Variable 28), favourably evaluate their French teacher (Variable 25) and French Canadians (Variable 24), are high in Need Achievement (Variable 11) and low in Machiavellianism (Variable 10).

As has been the case previously, the behavioural intention to drop out of the program (Variable 2) contributes negatively to the Integrative Motive dimension, indicating that integratively motivated students plan to continue with the French program. This pattern has appeared with such regularity that it cannot be overemphasized. An aspect of the integrative motive which appears to be of prime importance is that it motivates the student to continue studying the second language. This is so, presumably, because of the positive affect associated with the other language community and the perception of the value of the language as a means of communicating with that group. Such an orientation seems to sustain a strong motive to acquire the language which withstands onslaughts from other forces which might influence the student to waver from his goal.

Twelve variables define Factor III. The magnitude of the loadings for the four measures of students' self perceptions of their French competencies (Variables 29 - 32) suggests that this is best identified as a Self-Perceptions of French Achievement dimension. Variable 1 (Sex) contributes positively to this dimension indicating that girls tend to perceive themselves as more competent than boys. The remaining variables defining this dimension highlight the role that attitudinal variables play in such perceptions and it will be noted that many of these variables are characteristic of the integrative motive. A similar pattern, it should be noted, has appeared in most of the previous grades. In grade 11, Self-Perceptions of French Achievement are associated with an integrative orientation (Variable 22), heightened motivational intensity and a desire to learn French (Variables 20, and 21), favourable attitudes toward learning French (Variable 15), an interest in foreign languages (Variable 13) and favourable evaluations of both the French course and English course (Variables 27 and 26 respectively).

Factor IV is clearly an Anxiety dimension. Only three variables define this factor, the two indices of anxiety (Variables 16 and 17), and Sex (Variable 1). This configuration suggests that girls tend to be more anxious in both the French classes and the general school situation.

Nine variables define Factor V. Four of these variables are indices of language aptitude (Variables 4 - 7), one is the intelligence measure (Variable 40) and four are objective assessments of French achievement (Variables 41 - 44). Because of the high cognitive component evident in this factor, it seems best to characterize this as a Language Aptitude dimension. The results indicate that Language Aptitude is highly related to individual differences in French achievement, particularly as assessed by means of objective tests.

Factor VI is defined by six variables. The pattern of loadings indicates that Ss who obtain high scores on the F-scale (Variable 9) obtain high scores on the Ethnocentrism scale (Variable 12), the Anomie scale (Variable 19) and the Machiavellianism scale (Variable 10). Very similar configurations were obtained in the earlier analyses, and it seems most parsimonious to identify this as an Ethnocentrism dimension. The two remaining variables contributing to this factor indicate that Ethnocentrism is more characteristic of boys as opposed to girls (Variable 1) and is highly related to an instrumental orientation toward language learning (Variable 28).

Summary of Factor Analytic Results

A comparison of the factor analytic solutions obtained for the five grade levels reveals a number of important consistencies among the solutions and also demonstrates some interesting developmental differences. At each grade level, versions of the four following factors occured, School French Achievement, Integrative Motive, Self-Perceptions of French Achievement, and Ethnocentrism. Only the first three seem directly relevant to an understanding of the development of French skills.

At all grades the School French Achievement factor obtained its largest loadings from the seven teacher ratings of Ss' French skills (Variables 33 - 39). This, in large part, was why this factor was labelled as it was. That is, the criteria used by the teachers in making their ratings were assumed to be related to the curricular objectives of a particular course. At the grade 7 level, where students are beginning their study of French in a primarily oral/aural program, the only other variable contributing substantially to this factor is the measure of French Classroom Anxiety (Variable 16). Thus, it is perhaps not surprising that students who report that they are tense, embarrassed, and ill at ease when called upon to participate in their Oral French class are also rated as having more poorly developed French skills by their teachers. Beginning in grade 8 certain of the objective measures of French achievement also contribute to this factor and by grades 10 and 11 all five objective measures (Variables 41 - 45) receive substantial loadings on the School French Achievement factor. Also beginning in grade 8 the behavioral intention to drop-out of French studies (Variable 2) comprises part of this factor revealing that those students rated as less competent by their teachers also express a desire to quit their French studies. Perhaps this lack of teacher approval is in some sense a punishment that these students seek to escape. Aspects of the attitude/motivational battery also start to emerge as being part of the School French Achievement factor at the grade 8 level so that at the four upper grades, relationships between the teacher ratings and some combination of students' Desire to Learn French, Motivational Intensity, and Attitudes towards Learning French (Variables 21, 20, and 15) are apparent. The pattern shifts slightly from grade to grade but basically it shows that students who express favourable attitudes related to learning French also tend to be rated highly in their acquisition of French skills by their teachers. For all three grades in high school a component of the School French Achievement factor was the I.Q. score (Variable 40). Thus those Ss who received the highest teacher ratings also tended to have higher I.Q. test scores. Within the grade 10 and 11 samples the influence of language aptitude on this factor is also apparent with four of the MLAT subtests obtaining sizeable loadings for the grade 10 solution (Variables 3, 4, 6, and 7) while three (Variables 4, 6, and 7) contribute substantially at grade 11. The developmental changes in this factor across the five grade levels are most obvious if the results for grades 7 and 11 are contrasted. In grade 7 where Ss are just starting to acquire French skills the only other variable that is related to the teacher estimates is Ss' self-reports of the degree of anxiety they experience in French class whereas, by the time Ss have had five years of French instruction teachers' ratings tend to agree with both Ss' own estimates of their skills and with objective measures of those skills. The greater contribution of intelligence and language aptitude to this dimension at the higher grades may reflect the increasing demands and difficulty of the advanced levels of the French curriculum. To receive satisfactory teacher ratings at these levels it appears that the student must also have a reasonable level of both language aptitude and intelligence.

The Integrative Motive factor obtained in all five solutions presents a remarkably consistent picture across the five grade levels. Ss characterized as being integratively motivated to learn French express positive attitudes towards people who speak French (Variables 8 and 18), reveal a strong desire and a willingness to expend considerable effort at learning the language (Variables 20 and 21), perceive a high degree of parental encouragement for their French studies (Variable 14), demonstrate favourable attitudes about their French course (Variables 15 and 26) and language learning in general (Variable 13), and perhaps most significantly, state that they plan to continue their study of French (Variable 2). Thus it would appear that integratively motivated students place a sufficiently high value on French so that they intend to pursue their formal study of the language for relatively long periods and thereby develop a more thorough knowledge of it. This particularly important finding is approached from a somewhat different perspective and in rather more detail in the next chapter.

Students' own estimates of their progress in acquiring French language skills would also seem to provide a potential source of reinforcement for studying French. At all five grades the four self-ratings of French skills (Variables 29 - 32) combined to form a factor which we have labelled Self-Perceptions of French Achievement and although the other components of this factor vary somewhat from grade to grade some significant trends are apparent. At each grade, save for the grade 10 sample, students' desire to learn the language and the amount of effort they are willing to expend in learning it (Variables 21 and 20) also contribute substantially to this factor. This implies that those students who are willing to work hard at learning French because of a strong wish to master the language tend to see considerable pay off for their efforts. The lack of such a relationship for the grade 10 students is somewhat puzzling, however, both the Motivational Intensity and Desire to Learn French scales (Variables 20 and 21) do obtain marginal, positive loadings on this factor revealing at the least some continuity in the factor patterns across the grades.

This brief overview of the factor analytic results cannot fully describe the complexities and many subleties of the relationships discovered at the various grade levels. What it does do, however, is emphasize several important developmental trends and consistencies in the data. Moreover, these findings both confirm and extend the major conclusions presented in Chapter 3. The following section provides a further, more explicit description of the nature of such developmental changes.

Developmental Changes in Aptitude, Attitude, Motivation and French Achievement

Ideally, as was stressed in Chapter 3, the most adequate strategy for studying any type of developmental change would involve longitudinal comparisons of the same students over an extended time period. This was not possible given the time frame of the present studies and a compromise was arrived at using cross-sectional comparisons of the five grades surveyed. All of the limitations of such an approach and the precautionary statements presented in some detail in Chapter 3 apply equally well to the analyses described in the following section.

The results of the analyses of variance comparing the five grades on the major variables, excluding those which are dichotomous (i.e., Sex, Drop-out, and Orientation Index), are summarized in Table 8. Because these analyses involved

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Insert Table 8 About Here

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comparisons across grades, raw scores were used rather the standardized scores that were generated for the factor analyses. For the analyses of variance, grade level differences would have been obliterated by the standardization procedure which results in distributions with a mean of 0. Table 8 presents the resulting F ratios for the analyses of variance performed on each variable along with the means for each grade.

Inspection of Table 8 reveals that of the 42 analyses of variance conducted, only three failed to produce F ratios that were significant, whereas all of the remaining 39 F ratios are significant at or beyond the 1% level of significance. Thus on the majority of the variables, greater variability in the means across grades was obtained than could be attributed purely to chance. Careful examination of the means contained in Table 8 will reveal how the patterns of means differed from grade to grade, however, to make it easier for the reader to grasp these relationships, a series of figures have been prepared. Rather than plotting figures based on the means for each variable which yielded a statistically significant F ratio, where it was possible a single measure was selected to represent a whole class of variables if the results for each variable all conformed to essentially the same pattern.

Insert Figures 1-11 About Here

Figure 1 presents the means for each of the five grades for the variable, MLAT-Words in Sentences. The means for this variable show a consistent growth across all five grades. The patterns for the other four MLAT subtests, Number Learning, Phonetic Script, Spelling Clues, and Paired Associates, and for the Need Achievement and I.Q. scores also show basically the same patterns. As it is highly doubtful that a student's intelligence test scores increase with each year of schooling a more likely interpretation of these results is that they represent the fact that there is a selective attrition of the less able students from year to year. Thus the students who continue a formal education program tend to be brighter in general, and more achievement oriented, and those who continue second language studies also have a higher degree of language aptitude.

Figure 2 contains means for the five grades on the Ethnocentrism scale and is also representative of the results obtained for the Anomie, Machiavellianism, and Authoritarianism scales. Reference to Figure 2 demonstrates that the pattern of results obtained on this measure is such that the mean scores systematically decrease with each successively higher grade level. One interpretation of these results is that with more years of education students become less ethnocentric, authoritarian, machiavellian, and anomic. According to this interpretation one might argue that the educational experience these students are having is in effect, "liberalizing" them. Another possibility is that students who are actually higher in these characteristics are the ones likely to drop-out of French courses each year. However, the factor analytic results in the present chapter and data to be presented in Chapter 5 do not show a strong relationship between drop-out behavior and these particular dimensions and thus do not support this latter interpretation. Earlier in this chapter and also in Chapter 3 some concern was expressed as to both the low reliability estimates and the questionable validity and/or appropriateness of these four scales for students particularly within the younger age ranges included in the present studies. Following this line of reasoning, a third possible interpretation of the pattern of means represented in Figure 2 suggests itself. The measures of ethnocentrism, authoritarianism, machiavellianism and anomie may result in over inflated scores with questionable validity at the younger grades whereas the scores for the older, more mature students may be better estimates of the true underlying student characteristics.

Mean scores for each grade level on the Attitudes toward French Canadians scale are presented in Figure 3. Similar patterns were also obtained for the scales measuring attitudes toward learning French and a general interest in learning foreign languages. Reference to Figure 3 shows that there is a general drop in favourability of attitude on these dimensions between grades 7 and 8 and thereafter a reasonably steady improvement in attitudes from grades 8 to 11. The negative attitudinal shift between grades 7 and 8 has also been noted by Bramwell (1970) and Bramwell, Smythe and Dumas (1973). The initial, relatively positive level of attitude may represent something akin to novelty effect as students begin their French studies but which begins to pale as they continue on into grade 8. As noted by Gardner and Smythe (1973) and in Chapter 5, students within this particular educational system do not appear to fully appreciate the fact that French is an optional subject in grade 8 although they are all aware of its optional nature in secondary school. It is thus possible that students feel in some sense coerced to continue French at the grade 8 level even if they have decided that they do not like it after their initial experience in grade 7. Thus some grade 8 students may generalize their negative feelings toward the French course to other foreign language studies and to people who speak French. The steady improvement in attitudes on these dimensions between grades 8 and 11 may again represent the selective attrition from year to year of those students with less sanguine attitudes. This latter interpretation is congruent with the factor analyses in the present chapter and with results to be presented in Chapter 5.

The means of the five grades on the Motivational Intensity scale are plotted in Figure 4. Basically similar patterns were also obtained on the Desire to Learn French scale and for the measures reflecting Ss' evaluative reactions to their French Course and French teacher. These data demonstrate a substantial drop in means between grades 7 and 8, an increase at grade 9 followed by a drop at grade 10 and eventually an increase again at the grade 11 level. The decreases noted at grades 8 and 10 may be related to the fact that grade 8 represents the second year of the elementary school oral/aural program and grade 10, the second year of the more traditional, orthographically oriented (i.e., a stress on reading and writing skills) secondary school program. After an initial burst of enthusiasm as each program begins (i.e., in grades 7 and 9, respectively) some Ss may become somewhat jaded as the course demands become more severe. The upsurge in attitudes at the grade 11 level is probably due again to the fact that Ss with insufficient desire to learn French and who state that they are less willing to expend much effort in acquiring the language tend to drop-out.

The means for the Integrative-Instrumental Difference score when plotted result in a "U" shaped curve as presented in Figure 5. Means for the Attitudes toward European French People scale also conform to this pattern. All of the means in Figure 5 reflect a predisposition for students at each grade to endorse integrative reasons for studying French relatively more intensely than they do for the instrumental reasons. Moreover the grade 7 and 11 samples are higher in their degree of integrativeness than are the three middle grades.

The means for the Parental Encouragement scale presented in Figure 6 reveal a general increase in the perceived amount of parental support for French studies from grades 7 through 9 which then shows a general leveling off or slight decrease at the grade 10 and 11 levels. Presumably this reflects the fact that students who remain in the French program over an extended time period receive support and encouragement from their parents to do so.

The results for the students' self-ratings of their French skills produce two distinctly different patterns. The means for the self-rating of speaking skills are presented in Figure 7 which also typifies the pattern for the other oral/aural communicational aspect, the self-ratings of understanding. These patterns may be contrasted with those obtained for the grade means on the self-ratings of reading and writing which are exemplified in Figure 8, the plot of the reading skills. Students in grade 7 seem very confident about their ability to speak and understand French but by the time they are in grade 8 they appear to have a more realistic and considerably lower estimation of these skills. With further years of study they then begin to show higher and higher estimates of their proficiency in these skills. With the more formal and traditionally taught reading and writing skills the pattern of means shows a steady growth from grade 7 to 11.

All seven teacher-ratings of students' French skills generally show a steady decrease between grades 7 and 10 with a sudden upsurge at the grade 11 level. These results are exemplified by the pattern of means for the teacher-rating of speaking skills presented in Figure 9. It is very difficult to imagine that students are actually becoming less proficient as they proceed through the first four years of their French studies and the most likely explanation is that teachers' criteria for the various grades shift from level to level.

All of the objective measures of French achievement for the elementary school samples, except for the Sentence Comprehension test, show significant growth between grades 7 and 8. An example of this growth trend is presented in Figure 10 which presents the means for the Vocabulary subtests of the Elementary French Achievement Test. Similar trends are apparent at the high school level where all five objective measures showed significant growth across the three grades. This is illustrated in Figure 11 which shows performance means on the Vocabulary subtest of the C.A.T.F. Apparently Ss are improving in their level of French skill acquisition defined by objective measures as they advance from grade to grade.

Prediction of French Achievement

An important aim of the validation study was to ascertain whether the attitude/motivational tests might be combined in some way to actually permit the prediction of achievement in various aspects of French. Evidence bearing on this question is to some degree already available in the several factor analytic solutions already described but a more direct and possibly more practical approach was taken in the present section. This involved the use of the Multiple Stepwise Regression technique as described in Chapter 2. It may be recalled that this approach selects from a larger battery of tests those which contribute most to prediction of a specified criterion. The mechanics of this technique are such that each predictor test has an equal opportunity of being selected, however, in the present case we restricted our solutions so that only the four best predictor variables were actually determined with respect to each of the French achievement criteria. Standardized scores were used in these analyses for the same reasons as have already been cited with respect to the factor analytic solutions.

To provide as stable and valid estimates of French achievement as possible, total scores on the various achievement indices rather than subtest scores were selected as criteria. The French achievement criterion measures included: (i) the total score on the four students' Self-Rating scales (see p. 4-7), (ii) the total score on the Teacher-Rating of Speaking Skills (see p. 4-8), (iii) a total score of Teacher-Ratings of General Skills formed by summing responses to the four items on the second part of the teacher-rating form (see p. 4-8), (iv) either the total score on the four subtests of the French Achievement Test (see p. 4-8, 4-9) in the case of the grades 7 and 8 Ss or the total CATF score in the case of grades 9 - 10, and (v) either the total score on the 50-item Vocabulary test for grades 7 and 8 (see p. 4-9), or the total score on the Aural Comprehension test for grades 9 - 11 (see p. 4-10, 4-11).

Both aptitude and attitude/motivational measures as well as evaluative reactions to the French teacher and the French course were allowed to enter into the prediction equations. The following 19 variables were selected as potential predictors for each of the five French achievement criteria: the total score on the five MLAT sub-scales, I.Q., Attitudes toward French Canadians, Attitudes toward European French People, Attitudes toward Learning French, Interest in Foreign Languages, Parental Encouragement, Motivational Intensity, Desire to Learn French, Integrative-Instrumental Difference score (i.e., the relative degree of integrativeness), French Classroom Anxiety, General Classroom Anxiety, French Teacher (evaluative), French Course (evaluative), Need Achievement, Anomie, Ethnocentrism, Authoritarianism, and Machiavellianism.

Data for each grade level were analysed separately. Each of the grade level analysis involved the calculation of five sets of predictor equations, one for each of the French achievement criterion measures. The results of these analyses are summarized separately for each grade in Tables 9 - 13. Included in each table are the Beta coefficients associated with each of the four most potent predictors along with the resultant multiple correlation coefficients (R) for each criterion. To aid in the interpretation of the solutions presented in Tables 9 - 13, the predictor variables are listed in terms of the size of the contribution they make to the final multiple correlation coefficient. It is thus possible to make direct comparisons of the size of the contribution of each predictor by comparing their squared Beta coefficients (see Chapter 2, p. 13-14). A negative Beta coefficient indicates that the variable it is associated with is weighted negatively in making a prediction. For example, the negative Betas consistently obtained for the measure of French

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Insert Tables 9 - 13 About Here

Classroom Anxiety demonstrate that Ss with low scores on this test tend to do better on the various measures of French achievement of which it is a predictor.

Inspection of the data in Tables 9 - 13 reveals both some interesting consistencies within and across the grade levels and also demonstrates several intriguing developmental shifts. At all grade levels, for virtually every criterion measure the index of French Classroom Anxiety was selected as one of the four "best" predictors. In fact, French Classroom Anxiety contributed (negatively) in 24 out of the 25 prediction equations represented in Tables 9 - 13. While the relative contribution of this measure varied from criteria to criteria and from grade to grade it seems quite remarkable that it so consistently enters into the prediction equations whether the criterion measure represented Ss' self-ratings, either of the two teacher-ratings or either of the two objective test scores. It must be remembered that the content of this scale is highly situationally specific and all items refer explicitly to feelings of anxiety resulting from overt participation during the French Classroom period. It is perhaps of some interest to compare these results with those seven instances in which the measure of General Classroom Anxiety entered into a prediction equation as one of the four top predictors. These instances were: Grade 7 - Vocabulary; Grade 8 - Vocabulary; Grade 9 - Self-rating, Teacher-rating; General Skills, and Aural Comprehension; and Grade 10 - Self-rating and Aural Comprehension. In all of these cases except the first, Grade 7 - Vocabulary, General Classroom Anxiety obtained a positive weight! Whereas French Classroom Anxiety negatively predicts French Achievement, General Classroom Anxiety actually appears to promote certain French Skills at some of the grade levels.

Another variable that entered into a majority of the prediction equations as one of the more powerful predictors was the MLAT total score. This measure figured in 23 out of the 25 multiple regression solutions, the only exceptions being for the grade 9 Self-ratings and Teacher-ratings of General Skills. In general these findings with respect to the predictive power of the MLAT serve to confirm a large body of literature which attests to the validity of this instrument (e.g., Culhane, 1970; Jakobovits, 1970; Rivers, 1968). Careful inspection of the data in Tables 9 - 13 does however demonstrate that the MLAT is not always the most powerful predictor of French achievement although at the two most senior grade levels it does appear to make its most significant and consistent contributions to the several predictive equations. This would suggest that language aptitude becomes a more important determinant of second-language skills as the course becomes more advanced.

General intelligence entered into slightly more than 50% of the prediction equations (13 out of 25) and in no case was it the best single predictor. Surprisingly, I.Q. was not among the four best predictors for any of the five achievement measures at the grade 8 level.

The measure of Motivational Intensity which attempts to reflect the amount of effort an individual expends in his French studies was also included in 13 out of 25 of the prediction equations. Moreover, in seven instances it was the single best predictor of French achievement. While language aptitude seems particularly important at the more advanced levels of second-language training, Motivational Intensity made its strongest and most consistent contributions to prediction at the beginning levels in grades 7 and 8. Another component of what we have labelled the Integrative Motive, the Desire to Learn French, appears as a predictor in one equation for each grade except grade 11. Motivational Intensity and Desire to Learn French never both appear within the same equation although there is an obvious logical link between the two and they tend to correlate substantially with each other (see Appendix D). These two important components of the Integrative Motive therefore contribute to prediction in 17 out of the

25 regression equations. Two other central constructs of the Integrative Motive, the Integrative-Instrumental Difference score and the Attitudes toward Learning French begin to enter the prediction formulae at the two senior grade levels. The measure of integrativeness improves prediction of the total Aural Comprehension Test score at grades 10 and 11. Thus at the more advanced levels of French instruction Ss who are relatively more integratively than instrumentally oriented in their study of French tend to do best on the one test most closely associated with some degree of aural communicative competence. At the most advanced level tested, the measure of Attitudes towards Learning French was second in importance only to the MLAT total test score and in most equations made contributions of roughly similar magnitude to prediction.

Students' evaluative reactions to the French course surfaced as predictors of achievement only at the grade 8 and 10 levels. In both grades this measure was related to self-ratings and teacher-ratings of speaking skills. It will be recalled that within the London system that grades 8 and 10 represent the second year of the elementary and secondary school French programs, respectively.

In summary, it seems reasonable to conclude that the preceding exercise, representing a preliminary attempt to improve upon a single test score as a predictor of French achievement has been quite successful. Such an approach would appear to offer considerable promise. Obviously language aptitude is very important in predicting subsequent levels of French achievement, nevertheless, we have demonstrated that several of the attitude/motivational measures may afford equally significant predictive power. The major point to be made, however, is that a combination of aptitude and attitude/motivational indices produces appreciably better prediction. We would argue, therefore, that the concept of the Integrative Motive has more than a theoretical usefulness as demonstrated particularly by the factor analyses and multiple stepwise regression equations of the present chapter.

TABLE 1

COEFFICIENTS OF INTERNAL-CONSISTENCY RELIABILITY AT EACH GRADE LEVEL

Scale	Grade				
	7	8	9	10	11
Attitudes toward French Canadians	.84	.88	.87	.86	.89
Authoritarianism	.60	.51	.54	.59	.61
Machiavellainism	.48	.56	.60	.71	.76
Need Achievement	.55	.64	.65	.71	.75
Ethnocentrism	.60	.62	.60	.64	.59
Interest in Foreign Languages	.85	.89	.88	.88	.90
Parental Encouragement	.89	.89	.88	.88	.90
Attitudes toward Learning French	.94	.95	.95	.94	.95
French Classroom Anxiety	.75	.82	.83	.84	.85
General Classroom Anxiety	.72	.79	.83	.82	.86
Attitudes toward European French People	.90	.91	.91	.88	.93
Anomie	.48	.52	.61	.57	.51
Motivational Intensity	.86	.87	.84	.82	.84
Desire to Learn French	.88	.89	.87	.86	.87
Integrative Orientation	.82	.87	.84	.82	.85
Instrumental Orientation	.56	.63	.58	.58	.49

TABLE 2

TEST-RETEST COEFFICIENTS OF RELIABILITY AT EACH GRADE LEVEL

Scale	Grade				
	7	8	9	10	11
Attitudes toward French Canadians	.73	.79	.76	.80	.78
Need Achievement	.46	.63	.75	.72	.83
Ethnocentrism	.64	.84	.72	.76	.67
Interest in Foreign Languages	.83	.78	.84	.83	.82
Parental Encouragement	.79	.78	.69	.79	.88
Attitudes towards Learning French	.86	.86	.85	.90	.81
French Classroom Anxiety	.41	.68	.86	.88	.84
Attitudes towards European French People	.67	.68	.65	.71	.80
Motivational Intensity	.88	.78	.78	.79	.84
Desire to Learn French	.83	.80	.68	.87	.78
Orientation Index	.31	.63	.43	.51	.60
Integrative Orientation	.83	.77	.76	.83	.53
Instrumental Orientation	.68	.61	.69	.67	.49

TABLE 3

ROTATED FACTOR MATRIX - GRADE 7

		I	II	III	IV	V	VI
1.	Sex	.19	.05	.15	.05	.23	.45
2.	Drop-out	-.09	-.48	-.22	-.12	-.05	.10
3.	MLAT Number Learning	.23	.00	.54	-.03	.08	.05
4.	MLAT Phonetic Script	.23	.07	.54	.01	.04	-.15
5.	MLAT Spelling Clues	.03	.00	.32	-.05	-.01	-.19
6.	MLAT Words in Sentences	.13	.06	.40	-.02	.17	-.01
7.	MLAT Paired Associates	.16	-.03	.49	.13	.08	.00
8.	Attitudes toward French Canadians	.01	.55	.33	.52	.03	-.02
9.	Authoritarianism (F-Scale)	.04	.07	.04	.56	.06	.07
10.	Machiavellianism	-.09	-.22	-.32	.01	.01	-.23
11.	Need Achievement	.05	.16	.41	.00	-.06	.03
12.	Ethnocentrism (E-Scale)	-.10	-.13	-.43	.42	.04	-.17
13.	Interest in Foreign Languages	.16	.53	.29	.46	.12	.18
14.	Parental Encouragement	-.03	.42	.24	.33	.19	.09
15.	Attitudes toward Learning French	.18	.69	.20	.27	.27	.09
16.	French Classroom Anxiety	-.30	-.20	-.34	.23	-.24	.37
17.	General Classroom Anxiety	-.16	-.17	-.25	.31	.01	.40
18.	Attitudes Toward European French People	-.03	.50	.22	.55	.05	.04
19.	Anomie	.01	.00	-.20	.51	.04	-.11
20.	Motivational Intensity	.21	.71	.06	-.01	.42	.04
21.	Desire to Learn French	.11	.73	.07	.03	.43	.11
22.	Orientation Index	.00	.20	-.04	.02	-.01	-.07
23.	English Canadians (eval.)	-.04	.25	-.08	-.08	-.04	.40
24.	French Canadians (eval.)	.06	.53	.02	-.03	.00	.27
25.	French Teacher (eval.)	-.02	.66	-.01	-.11	.03	.07
26.	English Course (eval.)	.08	.21	.07	-.18	.08	.30
27.	French Course (eval.)	.12	.76	-.01	-.04	.29	.10
28.	Integrative - Instrumental	.02	.21	.18	.06	-.03	.09
29.	Self-rating - Writing	.02	.15	-.03	.17	.70	.09
30.	Self-rating - Understanding	.19	.34	.09	.09	.53	-.01
31.	Self-rating - Reading	.14	.27	-.07	.00	.65	.02
32.	Self-rating - Speaking	.20	.34	.03	-.02	.51	-.02
33.	Teacher-rating - Speaking	.90	.09	.25	.03	.16	-.02
34.	Teacher-rating - Willingness	.85	.15	.25	.02	.09	-.04
35.	Teacher-rating - Understanding	.83	.06	.24	-.03	.19	-.02
36.	Teacher-rating - Oral	.90	.09	.21	-.01	.16	.02
37.	Teacher-rating - Aural	.91	.11	.25	-.01	.12	.06
38.	Teacher-rating - Grammar	.92	.09	.24	.01	.14	.07
39.	Teacher-rating - Vocabulary	.92	.09	.24	.01	.13	.08
40.	I.Q.	.22	.02	.59	.03	.01	.05
41.	French Achievement Test - Vocabulary	.26	.02	.49	.12	.44	-.07
42.	French Achievement Test - Grammar	.20	.09	.34	-.08	.20	-.10
43.	French Achievement Test - Sentence Understanding	.12	-.04	.27	.02	.38	.04
44.	French Achievement Test - Paragraph Comprehension	.28	.03	.51	.01	.25	.22
45.	Vocabulary Test	.15	-.03	.35	-.01	.52	.03

TABLE 4

ROTATED FACTOR MATRIX - GRADE 8

		I	II	III	IV	V	VI
1.	Sex	.22	.40	-.16	-.14	.24	-.01
2.	Drop-out	-.36	-.27	-.22	-.01	-.24	.14
3.	MLAT Number Learning	.25	.06	.46	-.04	.01	.02
4.	MLAT Phonetic Script	.23	.08	.50	-.00	-.02	.03
5.	MLAT Spelling Clues	.11	.15	.43	.08	.01	.01
6.	MLAT Words in Sentences	.12	.20	.38	-.22	.20	-.15
7.	MLAT Paired Associates	.21	.06	.39	.00	.12	.10
8.	Attitudes toward French Canadians	.14	.71	.33	.16	.08	.07
9.	Authoritarianism (F-Scale)	-.08	.07	-.06	.67	.01	.03
10.	Machiavellianism	-.06	-.37	-.05	.18	.03	-.23
11.	Need Achievement	-.02	.20	.35	-.05	.22	.17
12.	Ethnocentrism (E-Scale)	-.18	-.31	-.15	.61	-.07	.01
13.	Interest in Foreign Languages	.12	.72	.23	.14	.28	.10
14.	Parental Encouragement	.08	.49	.25	.20	.05	-.15
15.	Attitudes toward Learning French	.25	.69	.19	.05	.39	.12
16.	French Classroom Anxiety	-.28	-.07	-.42	.21	-.27	-.18
17.	General Classroom Anxiety	.05	.19	-.43	.09	-.15	-.27
18.	Attitudes toward European French People	.14	.67	.22	.07	.05	.12
19.	Anomie	-.10	.11	-.07	.61	.05	-.09
20.	Motivational Intensity	.35	.55	.06	.00	.58	.14
21.	Desire to Learn French	.28	.64	.02	-.04	.51	.09
22.	Orientation Index	-.02	.29	.02	-.07	.00	.17
23.	English Canadians (eval.)	.10	-.06	.07	-.01	.07	.61
24.	French Canadians (eval.)	.10	.27	.03	-.04	.10	.55
25.	French Teacher (eval.)	.26	.27	-.14	.02	.21	.51
26.	English Course (eval.)	-.02	.18	.13	.00	.07	.42
27.	French Course (eval.)	.35	.40	-.08	.06	.38	.45
28.	Integrative - Instrumental	.10	.40	.06	-.20	.09	.18
29.	Self-rating - Writing	.28	.15	.08	-.02	.71	.17
30.	Self-rating - Understanding	.28	.16	.22	-.03	.66	.16
31.	Self-rating - Reading	.26	.10	.06	.04	.72	.07
32.	Self-rating - Speaking	.19	.13	.17	-.02	.76	.10
33.	Teacher-rating - Speaking	.88	.15	.20	-.08	.19	.12
34.	Teacher-rating - Willingness	.80	.06	.10	-.11	.23	.14
35.	Teacher-rating - Understanding	.87	.16	.17	-.03	.21	.13
36.	Teacher-rating - Oral	.85	.13	.21	-.13	.18	.10
37.	Teacher-rating - Aural	.86	.14	.19	-.08	.22	.06
38.	Teacher-rating - Grammar	.87	.15	.25	-.09	.16	.09
39.	Teacher-rating - Vocabulary	.88	.14	.23	-.12	.15	.13
40.	I.Q.	.11	.16	.60	-.19	-.03	.00
41.	French Achievement Test - Vocabulary	.49	.23	.38	-.01	.25	-.02
42.	French Achievement Test - Grammar	.32	.10	.38	-.17	.14	-.05
43.	French Achievement Test - Sentence Understanding	.21	.13	.19	-.07	.16	-.01
44.	French Achievement Test - Paragraph Comprehension	.37	.42	.24	-.10	.21	.03
45.	Vocabulary Test	.42	.19	.36	-.03	.13	-.19

TABLE 5

ROTATED FACTOR MATRIX - GRADE 9

		I	II	III	IV	V	VI
1.	Sex	.07	.23	.17	.04	.10	.47
2.	Drop-out	-.37	-.43	.01	-.30	-.02	.15
3.	MLAT Number Learning	.16	.13	-.05	.01	.36	-.05
4.	MLAT Phonetic Script	.26	.10	-.10	.03	.50	-.04
5.	MLAT Spelling Clues	.08	.13	-.04	.01	.44	-.07
6.	MLAT Words in Sentences	.20	.18	-.20	.01	.34	.02
7.	MLAT Paired Associates	.08	.11	.04	.00	.46	-.03
8.	Attitudes toward French Canadians	.08	.67	.00	.09	.17	.35
9.	Authoritarianism (F-Scale)	-.10	.03	.37	.16	.10	.01
10.	Machiavellianism	.01	-.22	.34	-.07	-.03	-.39
11.	Need Achievement	.06	.31	-.40	.09	.12	.13
12.	Ethnocentrism (E-Scale)	-.08	-.23	.57	.04	-.11	-.15
13.	Interest in Foreign Languages	.15	.78	.02	.20	.14	.22
14.	Parental Encouragement	-.02	.47	.02	-.03	.10	-.03
15.	Attitudes toward Learning French	.26	.68	-.01	.38	.11	.25
16.	French Classroom Anxiety	-.21	-.03	.60	-.32	-.29	.03
17.	General Classroom Anxiety	.04	.04	.70	-.17	-.13	.15
18.	Attitudes toward European French People	.01	.54	-.08	-.02	.21	.28
19.	Anomie	-.01	.13	.57	-.04	.06	-.03
20.	Motivational Intensity	.30	.46	-.09	.50	.01	.40
21.	Desire to Learn French	.31	.55	.02	.47	.02	.38
22.	Orientation Index	.13	.11	.11	.03	-.03	.43
23.	English Canadians (eval.)	-.22	.04	-.13	.10	-.03	.39
24.	French Canadians (eval.)	-.02	.25	-.14	.04	.04	.39
25.	French Teacher (eval.)	.06	.40	-.09	.13	.07	.14
26.	English Course (eval.)	-.15	.14	-.19	.21	.01	.25
27.	French Course (eval.)	.28	.54	-.03	.46	.06	.31
28.	Integrative - Instrumental	.09	.15	-.11	.04	.08	.44
29.	Self-rating - Writing	.28	.12	.01	.69	.14	.04
30.	Self-rating - Understanding	.25	.09	-.08	.75	.19	.14
31.	Self-rating - Reading	.21	.19	-.05	.74	.16	.01
32.	Self-rating - Speaking	.22	.12	-.08	.79	.15	.08
33.	Teacher-rating - Speaking	.88	.09	-.06	.22	.33	.06
34.	Teacher-rating - Willingness	.82	.12	-.06	.20	.27	.04
35.	Teacher-rating - Understanding	.84	.17	-.08	.22	.35	.04
36.	Teacher-rating - Oral	.89	.08	-.07	.20	.30	.02
37.	Teacher-rating - Aural	.84	.16	-.12	.23	.35	.03
38.	Teacher-rating - Grammar	.88	.09	-.06	.23	.32	-.01
39.	Teacher-rating - Vocabulary	.90	.09	-.07	.22	.30	.04
40.	I.Q.	.33	.17	-.29	.05	.24	-.47
41.	CATF Vocabulary	.26	.02	-.03	.18	.49	.13
42.	CATF Grammar	.25	.03	.01	.21	.53	.24
43.	CATF Comprehension	.12	.01	.07	.16	.50	.11
44.	CATF Pronunciation	.28	.08	-.17	.23	.52	.07
45.	Aural Comprehension (9-11)	.35	-.02	-.05	.33	.49	.13

TABLE 6

ROTATED FACTOR MATRIX - GRADE 10

		I	II	III	IV	V	VI
1.	Sex	.11	.38	-.08	.06	.23	.18
2.	Drop-out	-.45	-.36	-.08	-.13	.13	-.17
3.	MLAT Number Learning	.37	.24	-.07	.04	.13	.00
4.	MLAT Phonetic Script	.50	.14	-.13	.15	.04	-.12
5.	MLAT Spelling Clues	.27	-.02	-.02	.11	.08	-.07
6.	MLAT Words in Sentences	.46	.15	-.17	-.09	.04	-.09
7.	MLAT Paired Associates	.39	.22	-.07	.06	.14	.03
8.	Attitudes toward French Canadians	.13	.73	.07	.12	.05	-.06
9.	Authoritarianism (F-Scale)	-.02	.15	.51	.01	.05	.01
10.	Machiavellianism	-.04	-.36	.29	.03	.02	-.19
11.	Need Achievement	.13	.27	-.23	.06	-.26	.16
12.	Ethnocentrism (E-Scale)	-.17	-.19	.67	.05	.10	-.05
13.	Interest in Foreign Languages	.23	.79	.15	.13	-.03	-.00
14.	Parental Encouragement	-.03	.35	.09	-.07	.02	.02
15.	Attitudes toward Learning French	.30	.74	.09	.24	-.08	.26
16.	French Classroom Anxiety	-.24	-.02	.18	-.27	.74	.03
17.	General Classroom Anxiety	.05	.04	.21	-.03	.79	.08
18.	Attitudes toward European French People	.04	.57	.09	.17	.16	.02
19.	Anomie	-.09	.23	.65	.02	.14	-.06
20.	Motivational Intensity	.26	.62	-.05	.27	-.11	.44
21.	Desire to Learn French	.30	.71	.07	.26	-.09	.29
22.	Orientation Index	.17	.38	-.09	.04	-.07	.08
23.	English Canadians (eval.)	-.13	-.04	-.12	-.01	.18	.34
24.	French Canadians (eval.)	.08	.28	-.01	.11	.14	.42
25.	French Teacher (eval.)	.11	.15	-.03	.07	-.08	.54
26.	English Course (eval.)	-.15	.24	-.26	.01	-.01	.23
27.	French Course (eval.)	.25	.44	.07	.29	-.13	.51
28.	Integrative - Instrumental	.13	.48	-.14	.04	-.08	-.01
29.	Self-rating - Writing	.30	.18	.01	.64	-.05	.13
30.	Self-rating - Understanding	.27	.13	.14	.69	-.11	.16
31.	Self-rating - Reading	.21	.14	-.03	.79	-.06	.08
32.	Self-rating - Speaking	.20	.17	.03	.81	-.08	.04
33.	Teacher-rating - Speaking	.91	.14	.10	.13	-.16	.21
34.	Teacher-rating - Willingness	.78	.13	.15	.11	-.22	.27
35.	Teacher-rating - Understanding	.89	.08	.06	.13	-.22	.20
36.	Teacher-rating - Oral	.89	.14	.10	.12	-.14	.23
37.	Teacher-rating - Aural	.90	.10	.08	.14	-.16	.19
38.	Teacher-rating - Grammar	.90	.13	.07	.12	-.17	.21
39.	Teacher-rating - Vocabulary	.91	.12	.07	.13	-.15	.21
40.	I.Q.	.49	.08	-.20	-.16	-.08	-.15
41.	CATF Vocabulary	.64	.15	-.04	.33	.09	-.14
42.	CATF Grammar	.74	.15	-.09	.24	.06	.00
43.	CATF Comprehension	.54	.03	-.20	.19	.08	-.05
44.	CATF Pronunciation	.50	.17	-.19	.21	-.05	-.03
45.	Aural Comprehension (9-11)	.55	.11	-.15	.33	.03	-.14

TABLE 7

ROTATED FACTOR MATRIX - GRADE 11

		I	II	III	IV	V	VI
1.	Sex	.14	.26	.30	.38	-.01	-.30
2.	Drop-out	-.40	-.36	-.18	-.06	-.20	-.09
3.	MLAT Number Learning	.23	.02	.22	.05	.29	-.10
4.	MLAT Phonetic Script	.34	-.05	-.04	-.13	.48	-.08
5.	MLAT Spelling Clues	.22	.07	.02	-.07	.33	-.13
6.	MLAT Words in Sentences	.39	.09	.11	-.01	.48	-.10
7.	MLAT Paired Associates	.40	.06	.15	.17	.34	-.12
8.	Attitudes toward French Canadians	.11	.77	.06	.02	.04	-.05
9.	Authoritarianism (F-Scale)	-.02	.06	.05	-.03	-.25	.61
10.	Machiavellianism	-.14	-.47	-.05	-.13	.25	.39
11.	Need Achievement	.22	.36	.12	-.16	-.06	-.13
12.	Ethnocentrism (E-Scale)	-.10	-.24	-.02	.01	-.23	.62
13.	Interest in Foreign Languages	.23	.70	.31	.13	.27	-.02
14.	Parental Encouragement	-.04	.49	.01	.02	.03	.13
15.	Attitudes toward Learning French	.30	.63	.45	.07	.18	.01
16.	French Classroom Anxiety	-.30	.01	-.17	.74	-.19	.05
17.	General Classroom Anxiety	-.05	.07	-.08	.82	-.03	.10
18.	Attitudes toward European French People	.14	.67	.12	.02	-.07	-.08
19.	Anomie	-.08	.01	.15	.19	.08	.48
20.	Motivational Intensity	.25	.44	.63	.05	.07	-.15
21.	Desire to Learn French	.23	.52	.57	.07	.29	-.12
22.	Orientation Index	-.06	.30	.31	.07	-.01	-.27
23.	English Canadians (eval.)	.03	.23	.22	-.20	-.17	-.14
24.	French Canadians (eval.)	.02	.49	.12	-.03	-.03	-.23
25.	French Teacher (eval.)	.08	.39	.28	-.05	.18	-.01
26.	English Course (eval.)	.00	.14	.31	.02	-.23	-.07
27.	French Course (eval.)	.24	.47	.59	-.03	.11	-.01
28.	Integrative - Instrumental	.10	.40	.17	.01	.04	-.42
29.	Self-rating - Writing	.44	.16	.62	-.05	.06	.01
30.	Self-rating - Understanding	.41	.08	.65	-.24	.07	.20
31.	Self-rating - Reading	.27	.17	.65	-.06	.02	.06
32.	Self-rating - Speaking	.42	.12	.60	-.29	-.03	.13
33.	Teacher-rating - Speaking	.94	.11	.19	-.08	.08	-.08
34.	Teacher-rating - Willingness	.78	.13	.23	-.16	-.06	-.06
35.	Teacher-rating - Understanding	.91	.12	.17	-.06	.12	-.05
36.	Teacher-rating - Oral	.93	.12	.15	-.10	.07	-.03
37.	Teacher-rating - Aural	.92	.13	.14	-.02	.13	-.05
38.	Teacher-rating - Grammar	.91	.12	.21	.02	.13	-.11
39.	Teacher-rating - Vocabulary	.91	.12	.20	-.04	.11	-.10
40.	I.Q.	.40	.11	-.29	-.09	.40	-.03
41.	CATF Vocabulary	.64	.18	.08	-.05	.39	-.11
42.	CATF Grammar	.66	.19	.17	-.05	.37	-.10
43.	CATF Comprehension	.59	.12	.15	.04	.35	-.04
44.	CATF Pronunciation	.51	.05	.06	-.07	.34	.01
45.	Aural Comprehension (9-11)	.31	.05	.20	-.06	.08	-.25

TABLE 8

SUMMARY OF ANALYSES OF VARIANCE OF THE MAJOR VARIABLES

Variable	F-Ratio			Means		
				Grades		
		7	8	9	10	11
Sex[1]						
Drop-out[1]						
MLAT - Number Learning	63.16**	22.11	25.71	28.98	31.77	32.34
MLAT - Phonetic Script	77.90**	18.48	19.15	21.18	22.15	23.34
MLAT - Spelling Clues	110.02**	5.27	7.26	10.46	10.90	14.98
MLAT - Words in Sentences	133.26**	10.02	11.54	14.47	16.21	16.92
MLAT - Paired Associates	89.92**	9.40	11.15	14.03	15.13	16.07
Attitudes toward French Canadians	6.05**	48.84	47.63	48.63	48.95	52.00
Authoritarianism (F-Scale)	29.82**	46.23	44.52	42.06	41.06	39.65
Machiavellianism	3.29**	31.92	33.51	31.60	30.94	30.05
Need Achievement	4.12**	46.79	47.75	47.54	48.44	49.43
Ethnocentrism (E-Scale)	34.59**	34.81	31.46	30.40	29.60	27.21
Interest in Foreign Languages	5.03**	51.62	49.45	51.35	51.41	53.95
Parental Encouragement	10.29**	40.19	42.83	45.90	45.50	44.65
Attitudes toward Learning French	3.92**	48.29	44.12	46.93	46.91	49.13
French Classroom Anxiety	1.25	19.06	19.12	18.12	18.85	18.30
General Classroom Anxiety	.74	19.27	18.81	18.74	19.61	18.95
Attitudes toward European French	2.77**	43.91	43.05	42.47	42.47	44.41
Anomie	5.66**	39.89	39.01	38.70	38.12	36.95
Motivational Intensity	9.56**	21.38	19.47	21.26	20.75	21.71
Desire to Learn French	7.89**	21.78	20.37	21.47	21.28	22.63
Orientation Index[1]						
English Canadians (evaluative)	13.72**	70.16	67.93	64.52	63.28	63.41
French Canadians (evaluative)	6.07**	66.18	66.17	62.12	61.38	63.94
French Teacher (evaluative)	6.99**	56.83	53.86	57.63	55.04	60.84
English Course (evaluative)	21.22**	36.00	38.13	33.17	32.13	30.87
French Course (evaluative)	5.61**	33.73	29.86	31.56	30.20	32.00
Integrative - Instrumental Difference Score	3.54**	27.29	26.68	26.70	26.61	27.82
Self-rating - Writing	49.93**	2.64	3.24	3.69	3.67	4.04
Self-rating - Understanding	5.45**	4.34	4.00	4.05	4.06	4.35
Self-rating - Reading	40.53**	2.71	2.98	3.42	3.70	4.09
Self-rating - Speaking	5.27**	4.00	3.56	3.74	3.72	3.97
Teacher-rating - Speaking	15.15**	28.88	26.69	25.94	23.24	27.47
Teacher-rating - Willingness	12.78**	4.84	4.26	4.55	3.92	4.67
Teacher-rating - Understanding	7.51**	4.64	4.57	4.70	4.15	4.83
Teacher-rating - Oral	13.67**	4.86	4.52	4.33	3.93	4.62
Teacher-rating - Aural	12.10**	4.98	4.58	4.64	4.10	4.79
Teacher-rating - Grammar	11.47**	4.62	4.20	4.25	3.82	4.62
Teacher-rating - Vocabulary	14.53**	4.86	4.47	4.30	3.89	4.61
I.Q.	8.04**	63.23	62.80	65.29	65.13	66.75
French Achievement Test - Vocabulary	34.01**	12.55	14.41			
French Achievement Test - Grammar	12.02**	3.92	4.47			
French Achievement Test - Sentence Understanding	1.60	8.37	8.14			
French Achievement Test - Paragraph Comprehension	20.32**	10.69	11.89			
French Vocabulary Test	12.56**	13.51	14.96			
CATF - Vocabulary	187.86**			10.68	14.88	19.74
CATF - Grammar	192.58**			11.63	17.25	22.11
CATF - Comprehension	150.22**			3.14	4.54	6.31
CATF - Pronunciation	82.15**			4.92	6.57	7.78
Aural Comprehension	22.62**			12.08	16.97	13.57

** $p < .01$

[1] Analysis of variance could not be perfored on this variable.

TABLE 9

SUMMARY OF MULTIPLE REGRESSION ANALYSES

GRADE 7

Criterion	Predictors	Beta	R
Self-rating: Total	Motivational Intensity	.39	
	French Classroom Anxiety	-.25	
	I.Q.	.16	
	MLAT - Total	.14	.64
Teacher-rating: Speaking	MLAT - Total	-.22	
	French Classroom Anxiety	-.22	
	Motivational Intensity	.21	
	I.Q.	.20	.56
Teacher-rating: General Skills	Motivational Intensity	.24	
	MLAT - Total	.21	
	French Classroom Anxiety	-.20	
	I.Q.	.20	.56
French Achievement Test: Total	MLAT - Total	.30	
	I.Q.	.23	
	Motivational Intensity	.19	
	French Classroom Anxiety	-.16	.61
Vocabulary Test	Desire to Learn French	.29	
	MLAT - Total	.29	
	French Teacher (evaluative)	-.14	
	General Classroom Anxiety	-.10	.43

TABLE 10

SUMMARY OF MULTIPLE REGRESSION ANALYSES

GRADE 8

Criterion	Predictors	Beta	R
Self-rating: Total	Motivational Intensity	.39	
	MLAT - Total	.23	
	French Classroom Anxiety	-.21	
	French Course (evaluative)	.19	.74
Teacher-rating: Speaking	Motivational Intensity	.26	
	MLAT - Total	.25	
	French Classroom Anxiety	-.21	
	French Course (evaluative)	.18	.65
Teacher-rating: General Skills	Motivational Intensity	.33	
	MLAT - Total	.23	
	French Classroom Anxiety	-.21	
	Ethnocentrism	-.13	.63
French Achievement Test: Total	Motivational Intensity	.33	
	MLAT - Total	.31	
	French Classroom Anxiety	-.17	.67
	Attitudes Towards European French People	.14	
Vocabulary Test	MLAT - Total	.29	
	French Classroom Anxiety	-.26	
	General Classroom Anxiety	.17	
	Desire to Learn French	.16	.50

TABLE 11

SUMMARY OF MULTIPLE REGRESSION ANALYSES

GRADE 9

Criterion	Predictors	Beta	R
Self-rating: Total	French Classroom Anxiety	-.55	
	General Classroom Anxiety	.41	
	Motivational Intensity	.40	
	I.Q.	.35	.74
Teacher-rating: Speaking	Motivational Intensity	.35	
	I.Q.	.26	
	MLAT - Total	.21	
	French Classroom Anxiety	-.19	.65
Teacher-rating: General Skills	French Classroom Anxiety	-.48	
	I.Q.	.39	
	General Classroom Anxiety	.36	
	Motivational Intensity	.30	.67
CATF: Total	MLAT - Total	.31	
	French Classroom Anxiety	-.26	
	Motivational Intensity	.24	
	Anomie	.12	.56
Aural Comprehension Test	MLAT - Total	.28	
	French Classroom Anxiety	-.27	
	Desire to Learn French	.24	
	General Classroom Anxiety	.13	.51

TABLE 12

SUMMARY OF MULTIPLE REGRESSION ANALYSES

GRADE 10

Criterion	Predictors	Beta	R
Self-rating: Total	French Classroom Anxiety	-.46	
	MLAT - Total	.40	
	French Course (evaluation)	.31	
	General Classroom Anxiety	.27	.74
Teacher-rating: Speaking	MLAT - Total	.38	
	French Course (evaluation)	.30	
	French Classroom Anxiety	-.19	
	I.Q.	.19	.69
Teacher-rating: General Skills	MLAT - Total	.33	
	Desire to Learn French	.30	
	French Classroom Anxiety	-.18	
	I.Q.	.17	.65
CATF: Total	MLAT - Total	.41	
	Motivational Intensity	.22	
	I.Q.	.17	
	French Classroom Anxiety	-.16	.65
Aural Comprehension Test	MLAT - Total	.37	
	French Classroom Anxiety	-.34	
	General Classroom Anxiety	.19	
	Integrative-Instrumental Difference Score	.11	.52

TABLE 13

SUMMARY OF MULTIPLE REGRESSION ANALYSES

GRADE 11

Criterion	Predictors	Beta	R
Self-rating: Total	MLAT - Total	.36	
	Attitudes Toward Learning French	.22	
	French Classroom Anxiety	-.22	
	Motivational Intensity	.20	.71
Teacher-rating: Speaking	MLAT - Total	.31	
	Attitudes Toward Learning French	.29	
	I.Q.	.22	
	French Classroom Anxiety	-.22	.68
Teacher-rating: General Skills	MLAT - Total	.28	
	Attitudes Toward Learning French	.28	
	French Classroom Anxiety	-.23	
	I.Q.	.22	.66
CATF: Total	MLAT - Total	.33	
	Attitudes Towards Learning French	.29	
	I.Q.	.27	
	French Classroom Anxiety	-.18	.72
Aural Comprehension Test	Integrative-Instrumental Difference Score	.20	
	MLAT - Total	.18	
	French Classroom Anxiety	-.14	
	Machiavellianism	-.11	.38

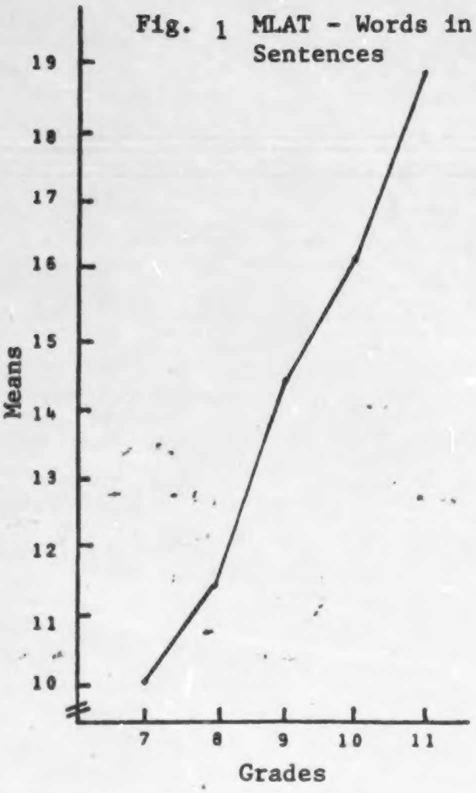

Fig. 1 MLAT - Words in Sentences

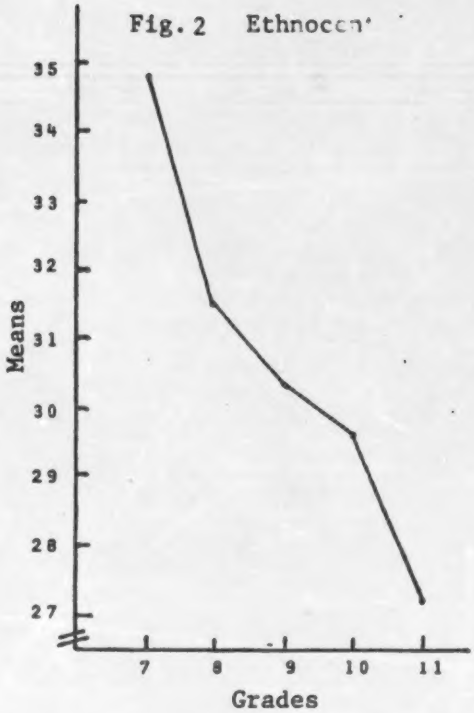

Fig. 2 Ethnocen

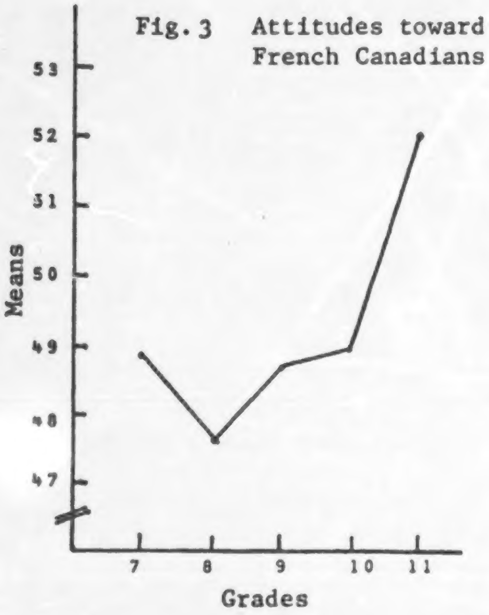

Fig. 3 Attitudes toward French Canadians

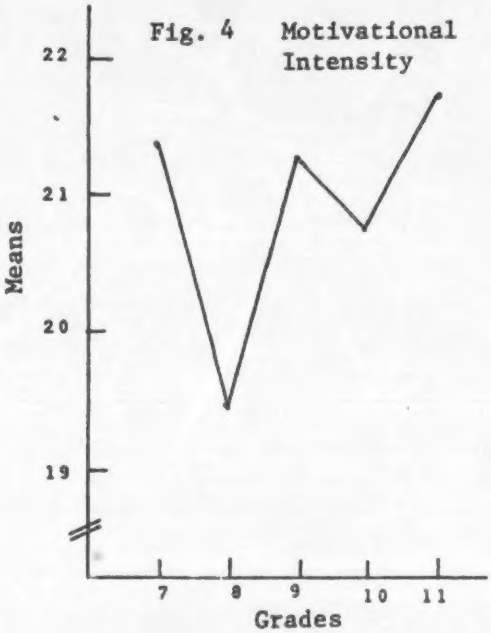

Fig. 4 Motivational Intensity

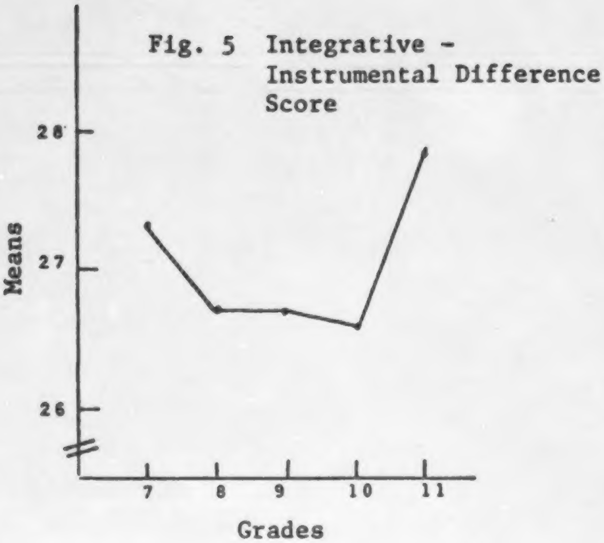
Fig. 5 Integrative - Instrumental Difference Score

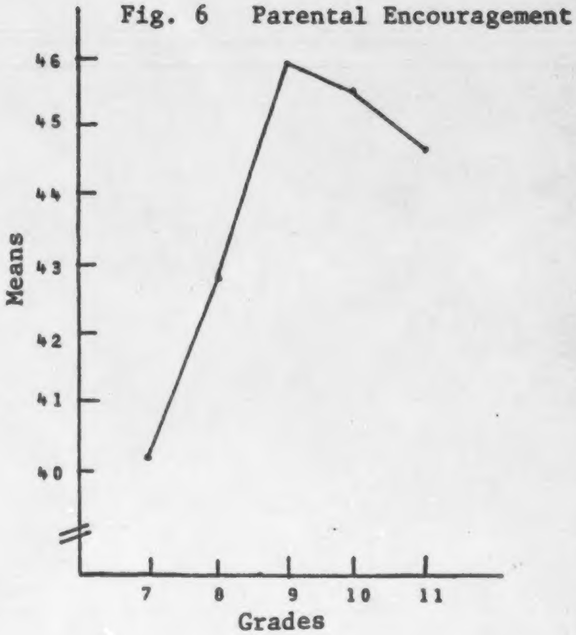
Fig. 6 Parental Encouragement

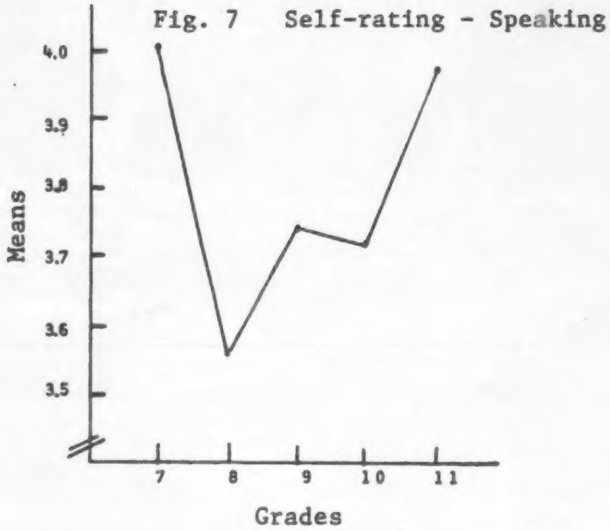
Fig. 7 Self-rating - Speaking

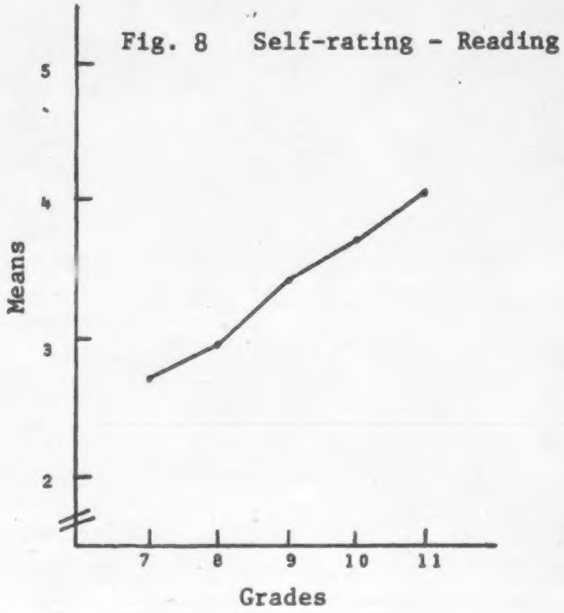
Fig. 8 Self-rating - Reading

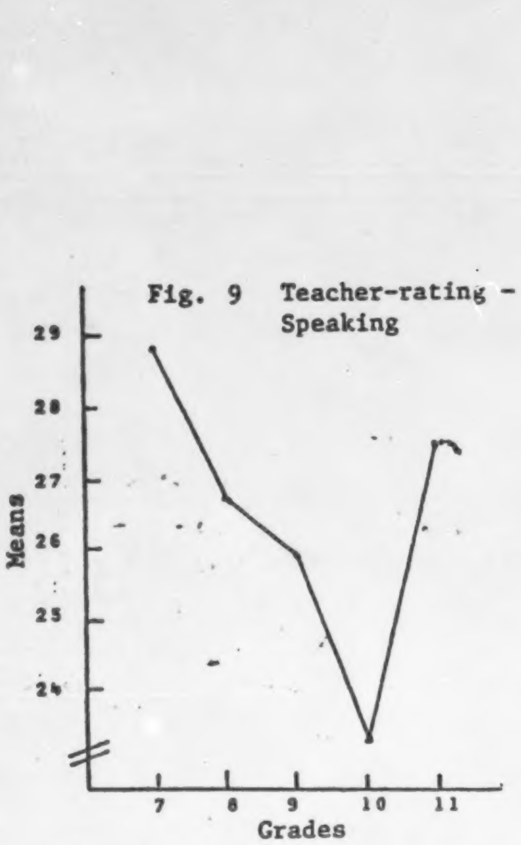
Fig. 9 Teacher-rating - Speaking

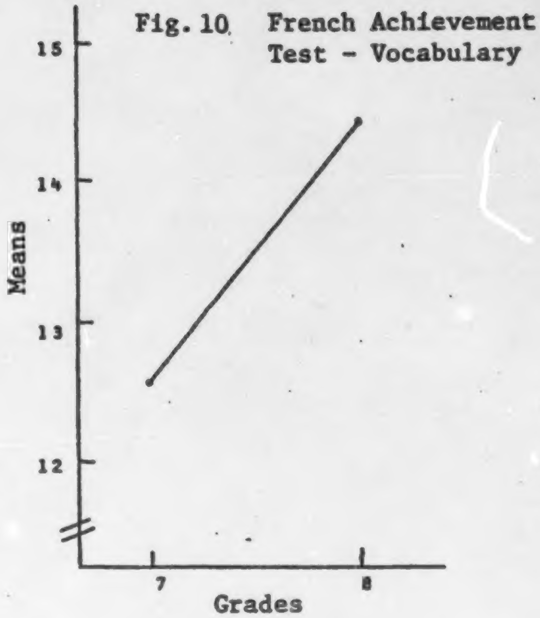
Fig. 10 French Achievement Test - Vocabulary

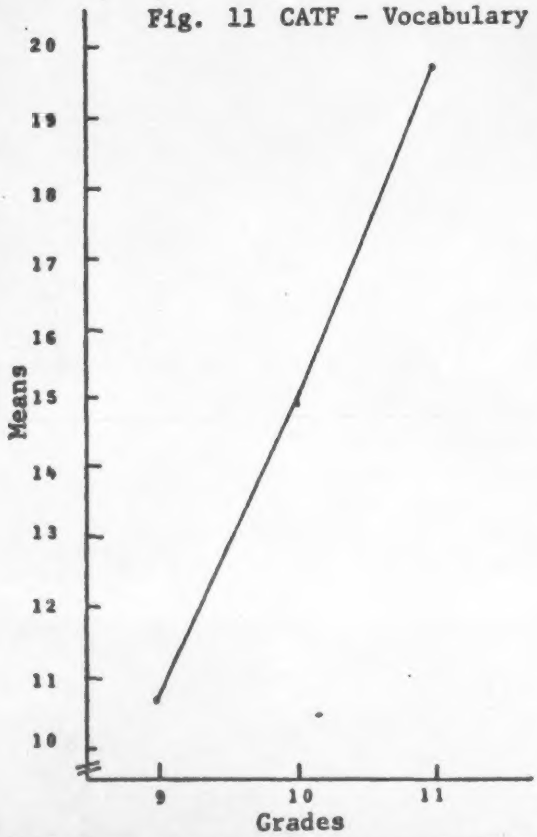
Fig. 11 CATF - Vocabulary

CHAPTER 5

THE DROPOUT PROBLEM

Introduction

Diana Bartley (1969, 1970) has introduced the phrase "the foreign language drop-out problem" to describe a situation increasingly being faced by second-language teachers in the United States. Drawing on figures based on both national and state surveys of foreign language enrollments from 1962 to 1968 she demonstrates that while the actual number of students taking second language courses is on the increase there is a decrease in the percentage of eligible students enrolled in these courses. Moreover, Bartley (1970) notes that,

> "...the more advanced the levels of language learning, the larger the decrease in enrollment figures...
> ....In terms of language learning theory, it would seem that an optimum learning experience for the student would be reached by continuous study of the foreign language over a period of years in order to achieve mastery of the basic skills of language learning. Completing one or two levels of a foreign language would certainly seem insufficient." (1970, p. 384-385)

Recently published figures from the Education Division of Statistics Canada (Steingarten and Cantin, 1973) reveal similar trends in French course enrollments in Canada. Figure 1, based on the data contained in this report, presents the enrollment figures for secondary school students taking French as a second language for the three-year period from 1970-71 to 1972-73. These figures are based only on nine provinces. The data for the Province of Quebec are excluded because second language instruction in that province refers primarily to English rather than French and the data in the present studies are concerned solely with French as a second language. Inspection of Figure 1 reveals substantial decreases in the percentages of secondary school students who are taking

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Insert Figure 1 About Here

French as a second language during this time period. The average drop in enrollments across all nine provinces is approximately 9% between 1970-71 and 1972-73. This decrease does not mean that fewer students, in absolute numbers, are taking French instruction, but rather that French course enrollments are not increasing at the same rate as is the growth in the secondary school population. The same document reveals potentially compensating forces which may modify this trend in future years. Figure 2 presents data on elementary school French course enrollments for the same time period. Ignoring the variations in trends from province to province, reference to Figure 2 will reveal a general increase from 1970-71 to 1972-73 in the percentage of elementary students enrolled in French language courses. The mean increase averaged across the nine provinces is approximately 4%. It will be several years, however, before the impact of this increased interest in French language instruction at the elementary grade level can be evaluated. Moreover, if the trends noted in the American surveys reported by Bartley (1969, 1970) continue to be true for the Canadian scene, it may well be that the effect of increasing elementary grade level second-language programs will be more than offset by subsequent language drop-outs at the secondary school level.

Insert Figure 2 About Here

Bartley (1969, 1970) found significant attitudinal differences between foreign language course drop-outs and students who continued their foreign language instruction, with the 'stay-ins' revealing more positive attitudes toward foreign languages than did the drop-outs. All of Bartley's Ss in both studies were tested in grade 8 and were assigned to one of two groups depending on whether or not they had "chosen to continue a foreign language in grade 9." The Foreign Language Attitude Scale employed by Bartley (1969, 1970) includes a rather heterogeneous mixture of 30 items thought to measure factors which could influence attitude. Bartley suggests (1970, p. 387) that the items may be grouped together to form various subscales, however, in both of her reports she chooses to use only total test scores. Although the Foreign Language Attitude Scale was originally developed with reference to Spanish, Bartley mentions the necessity of adapting it for French, German, and Latin (Bartley, 1969, p. 50, and 1970, p. 387). It would appear, therefore, that her Ss were enrolled in a variety of foreign language courses and it is not intuitively obvious that the same socio-psychological processes would underly attitudinal reactions to all foreign languages. That is, in the California setting in which these studies were conducted would it be possible to equate the reasons for learning, say Spanish and Latin?

In her earlier paper, Bartley (1969) also examined group differences in language aptitude, using the Modern Language Aptitude Test (Carroll and Sapon, 1959) and found that stay-ins obtained significantly higher aptitude scores than did the drop-outs.

Although not explicitly drawing attention to the question of student attitudes and language drop-outs, Mueller and Harris (1966) compared the drop-out rate of students enrolled in an experimental audio-lingual program, which borrowed heavily from the technology of programmed learning, with that of students in a more traditional audio-lingual program. The drop-out rate in their experimental program was significantly lower than that found for students in the control program. Presumably this difference in drop-out rate was in some way related to the improved motivating characteristics of the experimental program. Unlike Bartley (1969), Mueller and Harris found no significant differences in levels of language aptitude of their two samples.

The importance of the work of both Bartley (1969, 1970) and Mueller and Harris (1966) is that they have produced evidence which demonstrates that student attitudes and motivation are related to whether or not they drop out of language programs and, perhaps more significantly, in the latter instance, that it is possible to reduce the drop-out rate by manipulating conditions likely to influence student attitudes and motivation. It would seem, therefore, that the first step necessary to permit curriculum designers and teachers the opportunity to reduce the drop-out rate in problematic programs would be to establish a clear and explicit description of all those student characteristics which are related in a significant way to the decision to continue studies or drop-out of the program. The present chapter describes two studies designed to provide more detailed information concerning such student characteristics.

The first study utilizes data from a sample of the students involved in the original development of the attitude/motivational battery previously described in Chapter 3 while the second study is based on data from a sample of the students in the larger project discussed in Chapter 4.

The studies reported in this chapter represent an extension and refinement of the work of Bartley (1969, 1970) using both a more differentiated battery of attitudinal and motivational measures and a greater range of grade levels. It is unclear from her descriptions whether Bartley's Ss were catagorized as continuing or dropping their foreign language on the basis of a stated intention or on the basis of their subsequent behavior. The present studies, therefore, employed a more explicit and a more rigorous criterion for purposes of assigning Ss to stay-in or drop-out groups.

As well as attempting to replicate Bartley's (1969, 1970) general findings in a Canadian setting, these studies afford yet another test of the utility of the concept of the Integrative Motive. Chapters 3 and 4 presented information concerning various aspects of the reliability of the attitude/

motivational variables that were described as being components of the Integrative Motive. In obtaining significant relationships between these measures and indices of French achievement the results reported in Chapters 3 and 4 added to the growing body of research (see for example, Gardner and Lambert, 1972 for a review) which demonstrates a reasonable degree of validity for the concept of an Integrative Motive. The two studies to be covered in the present chapter represent another approach at expanding and extending the process of validating this construct. The analyses described in Chapter 4 included a variable which was referred to simply as "Drop-out". This variable actually represented a student's behavioral intentions, as of April, 1973 as to whether or not he planned to continue his French studies the following school year. In each of the factor analytic solutions for the five grade levels, the behavioral intention to continue French produced substantial loadings on the Integrative Motive factor demonstrating that Ss with high scores on the other components of this factor also tended to state that they planned to remain in French courses. There has been, however, considerable recent debate in social-psychological writings concerning the legitimacy of conclusions based on research relating attitudes to behavioral intentions rather then to the behavior itself (for a review and discussion of these issues, see Wicker, 1969). The data to be presented in Study II of the present chapter make possible a direct test of the relationship between Ss' stated behavioral intentions and their objectively observable behavior. Quite apart from their bearing on this interesting general theoretical issue, the present results hopefully will aid in evaluating the conclusions reached in Chapter 4 with reference to the relationship of the "Drop-out" variable (i.e., behavioral intention) with the other measures discussed in that chapter.

Finally, these studies permit a comparison of the relative effectiveness of measures of students' attitudes, language aptitude, and second-language achievement as predictors of the likelihood that a student will continue or drop out of second language courses.

STUDY I

Method

Subjects

Subjects (Ss) for this study were selected from the larger group of students employed in the initial test development phase previously described in Chapter 3. It will be recalled that the extended pilot versions of the attitude/motivational batteries were administered to students in April and early May 1972 while French achievement tests were given in late May or early June the same year. The following September, school records were examined and Ss were selected for inclusion in the present study only if they were still registered on the school rolls. Thus Ss who had transfered to other schools or who had dropped out of school entirely were excluded from further consideration. Due to complications arising from considerable student mobility and general dispersion in moving from elementary to secondary school it was not possible to trace sufficient numbers of grade 8 students to discover their disposition vis-à-vis French studies the following year. Similarly, the students that had comprised the grade 7 sample were also excluded from further consideration with reference to the drop-out problem because an excess of 90% of all grade 7 students continued taking French in grade 8. Informal observation suggested that most of these students apparently were not aware that French was an optional subject in grade 8.

The remaining secondary school Ss in each of the three grade levels were then categorized, on the basis of September course enrollment lists, as being French course stay-ins or drop-outs. This procedure insured that those Ss included in the drop-out samples had specifically elected to drop their French studies and yet were still enrolled in school. At the grade 9 level, 116 Ss were initially tested in May and of this sample, 12 Ss had been removed from the school rolls the following September, 66 Ss were still enrolled in a French course, and 38 Ss had dropped French. The corresponding figures for the grade 10 sample are: 92 Ss tested initially, 9 Ss removed from the school roll, 46 Ss continuing French studies, and 37 Ss dropping French, and for the grade 11 sample: 102 Ss tested initially, 9 Ss removed from the school roll, 55 Ss taking French, and 38 Ss dropping French. Data on the ratio of males to females in each of the stay-in and drop-out groups at each grade level are included later in the results section.

Variables

The following variables[1] were used to make within grade comparisons of the stay-in and drop-out samples:

1. Sex. Males coded 1, females coded 2.
2. Attitudes Toward Learning French
3. French Class Anxiety
4. General Classroom Anxiety
5. Interest in Studying Foreign Languages
6. Rating of Instrumental Orientation
7. Rating of Integrative Orientation
8. Motivational Intensity
9. Desire to Learn French
10. Parental Encouragement
11. Attitudes Toward French Canadians

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[1] All of the attitude/motivation measures used in this section are based on the final, short forms of the various scales whose construction and content are discussed in considerable detail in Chapter 3.

12. Attitudes Toward European French People
13. Need Achievement
14. Machiavellianism
15. Ethnocentrism
16. Authoritarianism
17. Anomie
18. Intelligence. Available only for the grade 9 and 10 samples.
19. Canadian Achievement Test in French - Vocabulary
20. Canadian Achievement Test in French - Grammar
21. Canadian Achievement Test in French - Comprehension
22. Canadian Achievement Test in French - Pronunciation

Results

(a) Sex Differences

Table 1 presents the number of stay-ins and drop-outs at each grade level as a function of student sex. The grade levels included in Table 1 and used in all subsequent analyses refer to the grade the student was in when he was administered the several test batteries. Although the majority of students had successfully advanced a grade level by the following September when they were categorized as stay-ins or drop-outs a small percentage of students still on the school rolls might be repeating their French courses. Such repetitions were not considered as particularly relevant to the focus of this chapter and are not considered in the comparisons of the stay-in and drop-out samples.

Insert Table 1 About Here

From Table 1 it is possible to calculate the percent of students dropping French between grades 9 and 10, 10 and 11, and 11 and 12. These figures are 36%, 45% and 41%, respectively. Thus it can be seen that sizeable numbers of Ss within each of the grade levels examined, subsequently decided to cease their French studies.

Table 1 also includes the results of Chi-square (χ^2) tests performed separately for the sex variable at each grade level. These tests show that both between grades 9 and 10, and between grades 10 and 11, disproportionately greater numbers of the males sampled chose to drop out then was true for the female samples. Between grades 11 and 12 no such significant sex effect was obtained although a similar trend ($p < .10$) was present. These results suggest that, in general, males are more likely to drop the second language course than are females.

(b) Attitude/Motivational and I.Q. Differences

Student scores on the remaining variables were compared for the stay-ins and drop-outs at each grade level by means of independent t tests. The mean scores for each of the attitude/motivational scales along with I.Q. measures are presented as a function of the stay-in, drop-out classification separately for each grade level in Tables 2, 3, and 4, respectively. Data concerning scores on the Canadian Achievement Test in French are presented in a later section. Also included in Tables 2 - 4 are the results of the independent t tests used to compare the scores of the stay-ins with those of the drop-outs.

Insert Tables 2, 3, and 4 About Here

Taken together, Tables 2 - 4 reveal remarkable similarities in the pattern and magnitude of effects across the three grade levels. Thus at each grade level, students who continue their French studies relative to those who drop out: express a more positive attitude toward learning French (Variable 2) and a greater interest in studying foreign languages in general (Variable 5) more strongly endorse both instrumental and integrative reasons for studying French (Variables 6 and 7), report a greater degree of motivational intensity and desire to learn French (Variables 8 and 9), perceive greater parental encouragement to study French (Variable 10), and express more positive attitudes toward French Canadians and European French people (Variables 11 and 12). It will be recalled that these variables all loaded on what was referred to as the Integrative Motive factor in Chapters 3 and 4. It therefore seems possible on the bases of these results to characterize the stay-ins as being relatively more integratively motivated in their approach to studying French than are those Ss who decided to drop-out of the course.

At the grade 9 and 10 levels, but not at grade 11 the drop-outs also express significantly more feelings of anxiety about participating during the French class (Variable 3). Interestingly, no differences in general classroom anxiety (Variable 14) were found between the stay-ins and drop-outs at any grade level.

The only other attitude/motivational variables which produced significant effects when comparing stay-ins with drop-outs were found solely within the grade 11 samples. These results showed the stay-ins tended to be higher in need achievement (Variable 13) and lower in both ethnocentrism (Variable 15) and anomie (Variable 17) than did the drop-outs at that grade.

The grade 9 drop-outs had significantly lower I.Q. scores (Variable 18) than did the stay-ins but no such effect was found for the grade 10 samples and I.Q. scores were not available for the grade 11 Ss.

(c) French Achievement Differences

Data concerning the level of French achievement on the four CATF subtests for the stay-ins and drop-outs at each grade level are included as Table 5 along with the results of the statistical tests. Several observations may be made

Insert Table 5 About Here

with reference to the data included in Table 5. At the grade 9 level only the Vocabulary and Pronunciation subtests (Variables 19 and 22) served to distinguish between stay-ins and drop-outs in a statistically significant fashion. For grades 10 and 11 all four subtests evidenced significantly superior performance for the stay-in samples. Finally it may be noted that the magnitude of the differences between the scores obtained by the stay-ins and drop-outs generally tends to increase as a function of the grade level tested.

In summary, the present results suggest that the attitude and motivational measures distinguish between those students who stay in and those who choose to drop out of the French program at least as well as, and in several instances more consistently across the three grades sampled than do the indices of intelligence and French achievement.

Any further discussion of the relative amounts of variability between stay-in and drop-out Ss accounted for by the the twenty-two variables just described will be postponed until the results of the second study are presented.

STUDY II

As encouraging and intriguing as the results for Study I were, it must be remembered that all of the scores on the attitude/motivational variables were generated from extended pilot versions of the several tests used. Moreover, save for a sub-sample of the grade 11 students, all of the Ss were enrolled in a single school whose particular philosophy and climate may not have been entirely representative of the secondary school French program in London. As it is impossible to know to what extent either of these two factors might have influenced the results obtained and thereby limited their generalizability it was decided to attempt to replicate and extend the findings of Study I using a sample of the students tested in the phase of the project described in Chapter 4. This procedure allowed for larger student samples drawn from three different secondary schools and at the same time provided information on a number of additional student characteristics not included in Study I.

Method

Subjects

Ss for this study were selected from the secondary school samples described in Chapter 4 in the same manner that was used to select students for Study I. Of the 329 Ss initially tested in grade 9, the following September 23 were no longer on their school rolls, 226 were still enrolled in a French course, and 80 Ss had dropped French. For the grade 10 sample the corresponding numbers are, 338 Ss tested initially, 26 Ss no longer on the school rolls, 213 Ss taking French, and 99 Ss dropping French, and for the grade 11 sample, 275 Ss tested initially, 22 Ss removed from the school rolls, 189 Ss still taking French, and 64 Ss dropping out of French studies.

Variables[2]

All of the 22 variables examined in Study I were included in the present investigation along with the following additional variables:

23. Modern Language Aptitude Test (MLAT) - Number Learning
24. Modern Language Aptitude Test (MLAT) - Phonetic Script
25. Modern Language Aptitude Test (MLAT) - Spelling Clues
26. Modern Language Aptitude Test (MLAT) - Words in Sentences
27. Modern Language Aptitude Test (MLAT) - Paired-Associates

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[2] The test schedule followed in Study II has previously been presented in detail in Chapter 4. Briefly, the MLAT was given in December 1972 - January 1973, the final short forms of the attitude batteries in February 1973 and April 1973, and the CATF in May 1973.

Students' reactions to the concepts "My French Course" and "My English Course", and "My French Teacher" were assessed by means of the semantic differential rating technique. Each concept was rated on a series of 7-point scales with the ends of each scale being anchored by pairs of descriptive, bi-polar adjectives.

The 30 scales used for the concept "My French Course" were each assigned to one of the following subscales:

28. Difficulty. Six scales were summed to provide an estimate of the perceived difficulty of the course with a high score reflecting a high level of perceived difficulty. The six difficulty scales are: simple--complicated, elementary-complex, effortless-hard, clear-confusing, organized-disorganized, and easy-difficult.

29. Personal Satisfaction. A high score on the four scales included in this subtest is indicative of a high degree of personal satisfaction with the course. The scales are: positive-negative, acceptable-unacceptable, satisfying-unsatisfying, and rewarding-unrewarding.

30. Utility. The following seven scales were scored so that a high score is associated with a high level of perceived utility: useful-useless, educational-noneducational, meaningful-meaningless, progressive-backward, important-unimportant, informative-uninformative and necessary-unnecessary.

31. Interest. Six scales, colorful-colorless, fascinating-tedious, interesting-boring, absorbing-monotonous, imaginative-unimaginative, and exciting-dull, were summed so that the higher the score the greater Ss' reported interest in the course.

32. Evaluation. Ss' general evaluative reactions to the course were assessed with these seven scales: pleasant-unpleasant, good-bad, pleasurable-painful, enjoyable--unenjoyable, valuable-worthless, nice-awful, and appealing-unappealing. A high score reflects a positive evaluation of the course.

Student reactions to their French teacher were gauged by 30 scales which were scored to reflect the following dimensions:

33. Evaluation. Eleven scales were summed to assess Ss' general evaluative reactions to their French teacher with a high score indicating a positive evaluation. The scales are: friendly-unfriendly, reliable-unreliable, good-bad, cheerful-cheerless, considerate-inconsiderate, pleasant-unpleasant, creative-uncreative, efficient-inefficient, polite-impolite, sincere-insincere, and dependable-undependable.

34. Competence. Ss' perceptions of their teacher's competence were tapped by the following five scales: organized-disorganized, intelligent-unintelligent, industrious-unindustrious, competent-incompetent, and helping-hindering. A high score is associated with a high degree of perceived competence.

35. Inspiration. Ss rated the extent to which they felt that their teachers inspired and interested them on these seven scales: exciting-dull, fascinating-tedious, imaginative-unimaginative, colorful-colorless, appealing-unappealing, absorbing-monotonous, and interesting-boring. High scores are indicative of high levels of inspiration and interest generated by the teacher.

36. Rapport. Teacher-pupil rapport was measured by seven scales scored so that the higher the score the greater the perceived rapport and warmth of the teacher. The seven scales are: trusting-suspicious, patient-impatient, likeable-unlikeable, sensitive-insensitive, approachable-unapproachable, openminded-opinionated, and interested-disinterested.

Results

(a) Sex Differences

The numbers of stay-ins and drop-outs at each grade level are presented in Table 6 as a function of sex. The percentages of students dropping French between grades 9 and 10, 10 and 11, and 11 and 12 are 26%, 32%, and 25%, respectively. While these drop-out rates are still of considerable magnitude, they are lower than the corresponding rates of 36%, 45%, and 41% reported in Study I.

Insert Table 6 About Here

The χ^2 values associated with the sex variable at each grade level are also included in Table 6. No differential drop-out rate as a function of sex was obtained for the grade 9 sample, however, disproportionately more males than females dropped out in both the grade 10 and 11 samples. Thus, as was the case in Study I, the present results again demonstrate a greater likelihood that males will drop out of French studies than will their female classmates.

(b) Attitude/motivational and I.Q. Differences

Mean attitude/motivational scale scores and I.Q. test results for the stay-in and drop-out groups are presented separately for each grade in Tables

7, 8, and 9 along with the t test values associated with each variable. The pattern of results displayed in Tables 7 - 9 once again reveals a high degree of similarity across the three grade levels. Relative to the drop-outs, stay-ins at each grade level, have more favourable attitudes toward learning French (Variable 2), report less anxiety about participating during French class Variable 3),[3] are more interested in studying foreign languages (Variable 5), more strongly subscribe to both instrumental and integrative reasons for studying French (Variables 6 and 7), express a greater degree of motivational intensity and desire to learn French (Variables 8 and 9), perceive greater parental support for their French studies (Variable 10), and have more positive attitudes toward French Canadians (Variable 11). At the grade 10 and 11 levels, but not at grade 9, the stay-ins also expressed more favourable attitudes toward European French people (Variable 12).

Insert Tables 7, 8, and 9 About Here

The grade 9 and 10 stay-ins were less ethnocentric (Variable 15) and obtained higher I.Q. scores (Variable 18) than did the drop-outs at these grade levels. These two differences were not obtained for the grade 11 samples. Within the grade 9 samples the stay-ins expressed a higher level of need achievement than the drop-outs (Variable 13).

In general then, as in Study I it appears warranted to characterize the stay-in Ss at all three grade levels as subscribing more strongly to many of the components of the Integrative Motive factor than do the drop-outs.

(c) French Achievement Differences

Mean scores on the four CATF subtests are presented in Table 10 as a function of grade level and the stay-in/drop-out classification. Reference to the t test values included in Table 10 reveals that significant differences

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[3] Note that there were no differences in General Classroom Anxiety between the stay-ins and drop-outs at any grade level.

Insert Table 10 About Here

were obtained between stay-in and drop-out performance on all four subtests at each of the three grade levels. With minor exceptions these results are also quite similar to those obtained for the CATF subtest scores in Study I. We will return to a discussion of the French achievement differences of stay-ins and drop-outs in a later section of this chapter wherein more explicit comparisons of Studies I and II will be made.

(d) Language Aptitude Differences

Table 11 contains mean performance scores on the five MLAT subtests for the stay-ins and drop-outs at each grade level. Inspection of the results of

Insert Table 11 About Here

the independent t tests included in this table reveals that the Number Learning, Words in Sentences, and Paired-associates subtests (Variables 23, 26, and 27) all discriminated between the stay-ins and drop-outs in a statistically significant manner at each grade level. Performance on the Spelling Clues subtest (Variable 25) was not significantly different for the grade 9 samples but at the grade 10 and 11 levels significant differences were obtained. Similarly, no significant difference was found for the grade 11 samples on the Phonetic Script subtest (Variable 24) while statistical significance was attained in the grade 9 and 10 comparisons. These results are generally congruent with those of Bartley (1969) who, however, reported only the total MLAT scores obtained by her samples.

(e) Differences in Student Perceptions of "My French Course" and "My French Teacher"

Estimates of the internal consistency reliabilities for each of the French Course and French Teacher subscales were computed using the Kuder-Richardson 20 formula and are presented for five grade levels in Table 12.

Insert Table 12 About Here

Examination of these coefficients reveals that all are quite substantial and consistent across grade levels thus permitting a reasonable degree of confidence to be placed in the subscale scores.

Mean scores on the five French Course and four French Teacher subscales are presented as a function of the stay-in/drop-out classification separately for each grade in Tables 13, 14, and 15 respectively.

Insert Tables 13, 14, and 15 About Here

Each of the five French Course subscales yielded statistically significant *t* values at all three grade levels. Students who continue their French studies relative to those who drop-out, see their French course as being: less difficult (Variable 28), and more personally satisfying, useful, and interesting (Variables 29, 30, and 31). Stay-ins at all grade levels also expressed significantly more positive general evaluative reactions (Variable 32) to their French course. It may be recalled at this point that *Ss* were also asked to rate the concept "My English Course" on the same 30 scales as were employed for the French Course and these scales were scored in the same way to produce the five subscale scores. Although these results will not be presented in any detail here it is sufficient to note that no significant differences were found between French course stay-ins' and drop-outs' perceptions of their English Course in terms of any of the five preceding subscales. Thus, Ss' scores on the French course subscales appear to be related specifically to that concept and are not merely reflecting a more generalized set of perceptions concerning school in general or other particular subject areas.

Students' perceptions of their French teacher differed significantly on all four subscales for the stay-in/drop-out samples at both grades 9 and 10 but for the grade 11 students none of the subscale scores resulted in significant ts. Drop-out Ss in grades 9 and 10, compared to the stay-in Ss, rated their teachers less positively in terms of general evaluative reactions (Variable 33) and also saw them as less competent (Variable 34), less inspirational (Variable 35), and as having less rapport with students (Variable 35). At the grade 11 level Ss' perceptions of their teachers apparently are not related to the decision to stay in or drop out of the course. It is perhaps of some interest to note that by the time students are in grade 11 they appear to make a greater distinction between their reactions to or perceptions of their French course and their French teachers than do the younger students. Thus the grade 11 drop-outs tend to hold less sanguine views of the French course than do the stay-ins at that grade level but both groups have similar impressions of their French teachers.

(f) A Comparison of Stated Behavioral Intentions and Actual Behavior

Each of the Ss in Study II had been asked in April, 1973 whether they planned to continue their French studies the following year and it was, therefore, possible to compare these self-prophecies with their actual behavior. Table 16 presents the 2 x 2 contingency tables produced for each grade level to test these relationships. The resulting χ^2 values for the intention-behavior comparisons

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Insert Table 16 About Here

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are included to the right of Table 16. In each case these tests yielded highly significant results ($p < .001$) which revealed an extremely close correspondence between Ss' stated intentions toward the course and their subsequent behavior. These findings permit much more confidence to be placed in the interpretations and conclusions presented in Chapter 4 where only the behavioral intention measure was used. To all intents and purposes, the behavioral intention measure and the subsequent behavior may be viewed as being equivalent or interchangeable in the present instance.

The Relative Importance of Student Characteristics and the Drop-out Problem: Studies I and II Compared

A large number of the comparisons of stay-in with drop-out students' test performance in both Studies I and II produced differences that were statistically significant. However, as Hays (1963) has pointed out, the occurence of a statistically significant result does not reveal anything about the actual strength of the association between the independent and dependent variables involved. Put another way, it is not always obvious just what the practical significance of a statistically significant difference is. Fortunately, Hays (1963) does offer some help in attacking this problem in his discussion of the Omega squared (ω^2) statistic which may be viewed either as an estimate of the strength of association between the independent and dependent variables or as an estimate of the proportion of observed variability in one measure accounted for by knowledge of a second variable. This index may be defined by the formula,

$$\omega^2 = \frac{t^2 - 1}{t^2 + N_1 + N_2 - 1}$$

where t^2 represents the squared t ratio obtained from a comparison of two means and the values of N_1 and N_2 refer to the sizes of the two samples being compared. Thus, ω^2 reflects the predictive power afforded by the knowledge of a relationship (e.g., the t values obtained in the present studies) between two variables.

For each comparison of means in Studies I and II that resulted in a statistically significant t value the corresponding ω^2 values were calculated and these data are presented in Table 17.

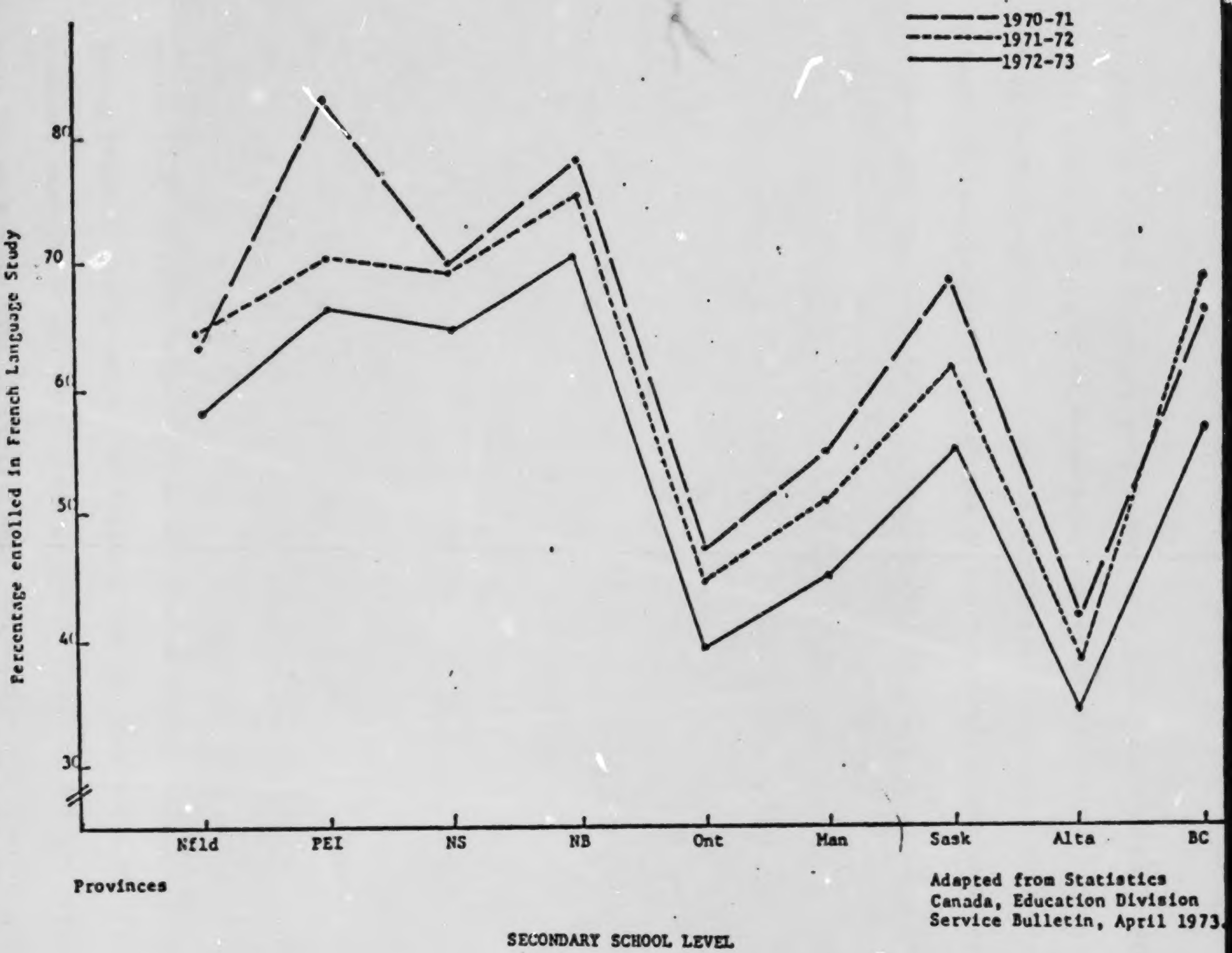
Insert Table 17 About Here

For all three grade levels within Study I the best single predictor of drop-out behavior is the Attitude Toward Learning French scale which accounts for 29%, 51%, and 39% of the variability between stay-ins and drop-outs at grades 9, 10, and 11, respectively. If the ω^2 values within each grade level in Study I are compared it can be seen that, in general, the attitude/motivational indices provide a somewhat better basis for predicting potential drop-outs than do either the I.Q. scores or the measures of French achievement. It may also be noted, however, that the predictive power of the C.A.T.F. scores increases as a function of grade so that by grade 11, three of the four C.A.T.F. subscales each account for more than 20% of the variability between stay-ins and drop-outs.

The pattern of results is very similar when the ω^2 values are examined for Study II although in most cases the size of ω^2 is somewhat smaller than in Study I. This reduction in the proportion of variability accounted for by each of the variables in Study II was to be expected because of the substantial increase in sample sizes between Studies I and II. Basically this reduction in the size of ω^2 is associated with the larger denominator in the ω^2 formula resulting from the increased sample sizes, however, the interested reader may want to consult Hays (1963, p. 329-333) for a more detailed technical explanation of the relationship between strength of association and sample size.

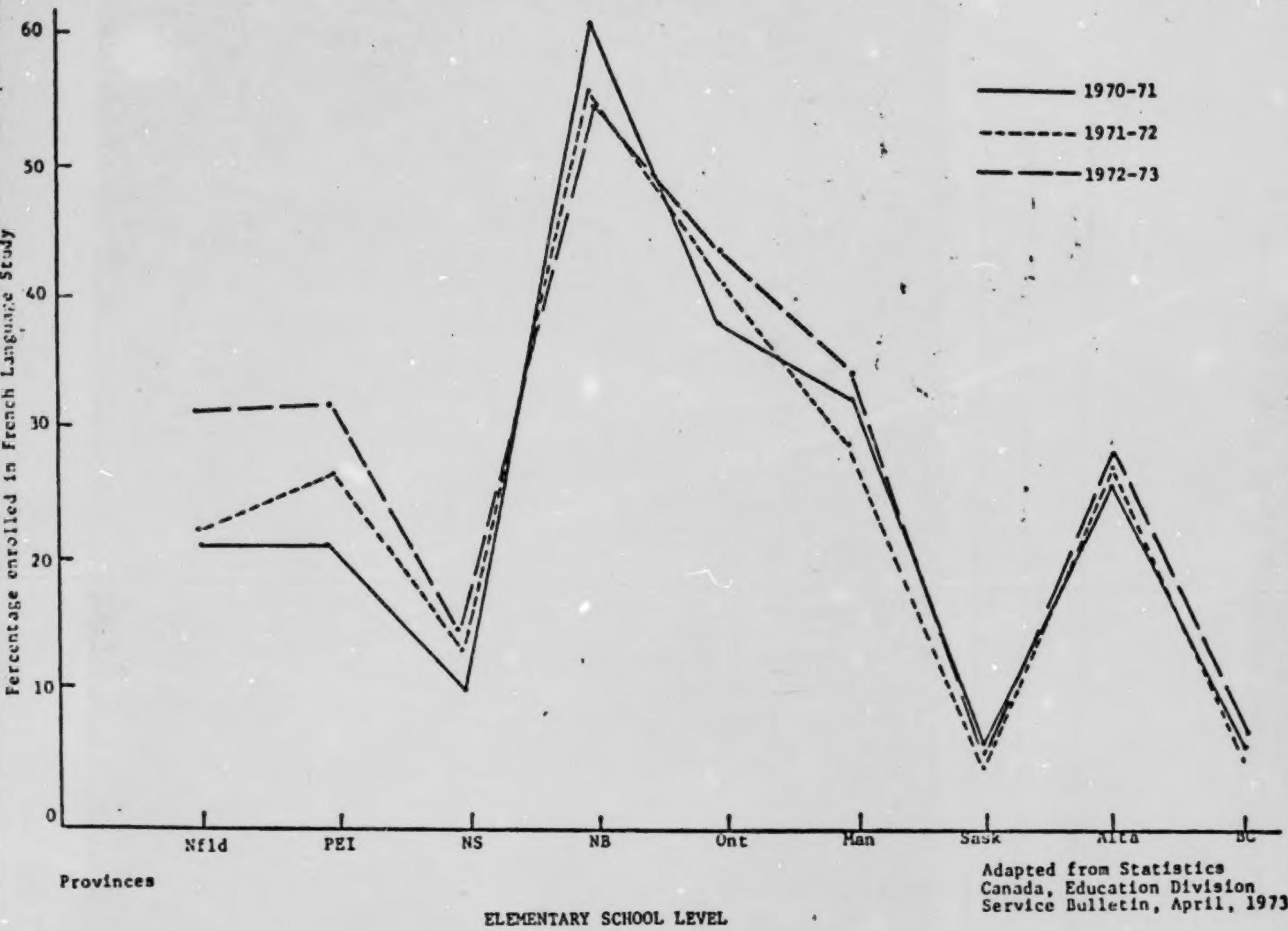
As was the case in Study I, the best single predictor of subsequent drop-out behavior at all three grade levels in Study II was the Attitudes Toward Learning French scale. At grades 9 and 10, particularly, the attitude/motivational variables afford better predictive power in general than do either the C.A.T.F. or M.L.A.T. subscale scores. With one exception (MLAT - Paired-associates at grade 11) none of the language aptitude scores accounts for even 10% of the variability between stay-ins and drop-outs. Finally, at each grade level Ss'perceptions of the various aspects of the French Course measured by the semantic differential are considerably better predictors than are their reported perceptions of their French Teachers.

A detailed examination of the data of Table 17 leads to the conclusion that for all grades included in both studies the attitude/motivational variables appear to afford the best possibility of predicting probable French course drop-outs. Moreover, those attitude/motivational indices that most consistently are associated with substantial amounts of explained variability between stay-ins and drop-outs are also components of what has been described as the Integrative Motive factor in preceding chapters. Thus the present results may be interpreted as further validation for the construct of the Integrative Motive. From a practical pedagogical point of view it would therefore seem important for second-language teachers to foster an integrative orientation in their students both to improve the level of second-language skill attainment and also to decrease the likelihood that a student will prematurely retire from language studies.



Adapted from Statistics Canada, Education Division Service Bulletin, April 1973.

Figure 1. Percentage of students enrolled in French language study at the secondary school level by province (Quebec excluded).



Adapted from Statistics
Canada, Education Division
Service Bulletin, April, 1973.

Figure 2. Percentage of students enrolled in French language study at the elementary school level by province (Quebec excluded).

TABLE 1

THE NUMBER OF FRENCH COURSE STAY-INS AND DROP-OUTS AS A FUNCTION OF SEX AND GRADE LEVEL (STUDY I)

Sex	Grade					
	9		10		11	
	Stay-in	Drop-out	Stay-in	Drop-out	Stay-in	Drop-out
Male	26	25	9	18	16	18
Female	40	13	37	19	39	20

$\chi^2 = 6.7323^{**}$ $\chi^2 = 7.9027^{**}$ $\chi^2 = 3.2369$

** $p < .01$

TABLE 2

GROUP MEAN ATTITUDE, MOTIVATIONAL, AND INTELLIGENCE TEST SCORES OF GRADE 9 FRENCH COURSE STAY-INS AND DROP-OUTS (STUDY I)

Variables	Stay-In		Drop-Out		
	$\bar{X}$	SD	$\bar{X}$	SD	_t_ Value[1]
Attitudes Towards Learning French	51.07	11.62	34.19	14.21	6.329**
French Class Anxiety	15.63	6.29	21.19	6.04	-4.255**
General Classroom Anxiety	16.65	6.45	18.97	6.87	-1.666
Interest in Studying Foreign Languages	54.11	9.12	43.79	11.66	4.675**
Rating of Instrumental Orientation	19.19	4.32	14.56	6.17	4.335**
Rating of Integrative Orientation	19.59	4.15	15.32	5.46	4.334**
Motivational Intensity	22.35	3.45	19.49	3.45	4.036**
Desire to Learn French	22.61	3.78	18.26	3.48	5.750**
Parental Encouragement	45.56	10.59	34.53	13.26	4.489**
Attitudes Towards French Canadians	50.57	10.15	45.56	9.30	2.415*
Attitudes Towards European French People	44.45	6.86	40.88	8.35	2.199*
Need Achievement	48.09	8.35	46.00	6.87	1.228
Machiavellianism	31.94	9.51	32.35	8.11	-0.216
Ethnocentrism	28.68	8.43	29.94	8.01	-0.723
Authoritarianism	42.30	8.50	44.32	9.78	-1.032
Anomie	19.00	4.42	19.41	4.59	-0.433
Standardized Intelligence Test Score	68.14	7.91	62.22	9.03	3.327**

[1] Note: _t_ values are the result of independent _t_ tests based on within grade comparisons. Sample sizes fluctuate slightly from scale to scale because of absenteeism during the several testing sessions, however, these variations have been taken into account in determining significance levels.

* $p < .05$

** $p < .01$

TABLE 3

GROUP MEAN ATTITUDE, MOTIVATIONAL, AND INTELLIGENCE TEST SCORES OF GRADE 10 FRENCH COURSE STAY-INS AND DROP-OUTS (STUDY I)

Variables	Stay-In		Drop-Out		t Value[1]
	$\bar{X}$	SD	$\bar{X}$	SD	
Attitudes Towards Learning French	52.80	10.18	30.06	12.03	9.208**
French Class Anxiety	16.17	7.07	21.63	5.72	-3.726**
General Classroom Anxiety	17.61	6.96	19.54	7.02	-1.234
Interest in Studying Foreign Languages	52.43	9.38	42.47	10.13	4.438**
Rating of Instrumental Orientation	17.98	4.43	13.97	5.27	3.672**
Rating of Integrative Orientation	18.09	3.22	14.94	4.14	3.801**
Motivational Intensity	22.33	3.64	18.40	3.35	5.050**
Desire to Learn French	22.29	3.41	18.35	3.13	5.432**
Parental Encouragement	42.41	11.46	34.00	12.53	3.109**
Attitudes Towards French Canadians	50.87	8.38	44.71	8.53	3.249**
Attitudes Towards European French People	41.76	4.04	39.59	5.45	1.995*
Need Achievement	46.24	9.44	43.56	7.30	1.358
Machiavellianism	33.55	7.44	33.43	7.25	0.070
Ethnocentrism	26.39	6.48	28.06	8.52	-1.000
Authoritarianism	38.67	11.16	38.62	7.67	0.022
Anomie	19.09	4.48	17.83	4.79	1.207
Standardized Intelligence Test Score	67.01	6.93	65.02	6.12	1.225

[1] Note: t values are the result of independent t tests based on within grade comparisons. Sample sizes fluctuate slightly from scale to scale because of absenteeism during the several testing sessions, however, these variations have been taken into account in determining significance levels.

* $p < .05$

** $p < .01$

TABLE 4

GROUP MEAN ATTITUDE, MOTIVATIONAL, AND INTELLIGENCE TEST SCORES OF GRADE 11 FRENCH COURSE STAY-INS AND DROP-OUTS (STUDY I)

Variables	Stay-In		Drop-Out		
	$\bar{X}$	SD	$\bar{X}$	SD	*t* Value[1]
Attitudes Towards Learning French	57.73	9.20	37.18	16.28	7.075**
French Class Anxiety	16.18	6.69	17.73	6.31	-1.035
General Classroom Anxiety	18.27	6.67	18.03	6.51	0.156
Interest in Studying Foreign Languages	59.85	6.65	46.42	14.03	5.769**
Rating of Instrumental Orientation	20.08	3.72	14.94	7.42	4.318**
Rating of Integrative Orientation	21.56	3.91	15.97	6.10	5.151**
Motivational Intensity	23.51	3.08	19.57	3.54	5.668**
Desire to Learn French	25.31	3.53	19.54	3.75	7.496**
Parental Encouragement	46.92	12.30	37.91	13.99	3.121**
Attitudes Towards French Canadians	56.27	9.80	44.06	10.57	5.258**
Attitudes Towards European French People	47.21	6.24	42.79	5.62	3.258**
Need Achievement	52.02	8.54	45.00	10.10	3.373**
Machiavellianism	27.04	8.96	30.67	9.62	-1.769
Ethnocentrism	23.80	7.08	27.79	6.14	-2.597*
Authoritarianism	37.73	9.78	39.61	10.13	-0.837
Anomie	16.83	5.01	19.12	4.19	-2.189*

[1] Note: *t* values are the result of independent *t* tests based on *within* grade comparisons. Sample sizes fluctuate slightly from scale to scale because of absenteeism during the several testing sessions, however, these variations have been taken into account in determining significance levels.

* $p < .05$

** $p < .01$

TABLE 5

GROUP MEAN PERFORMANCE SCORES ON CATF SUBTESTS OF FRENCH COURSE STAY-INS AND DROP-OUTS AT THREE GRADE LEVELS (STUDY I)

Grade		CATF SUBTESTS											
		Vocabulary			Grammar			Comprehension			Pronunciation		
		$\bar{X}$	SD	*t* Value[1]	$\bar{X}$	SD	*t* Value	$\bar{X}$	SD	*t* Value	$\bar{X}$	SD	*t* Value
9	Stay-in	11.49	3.46	2.746**	13.94	3.99	1.938	4.34	1.87	1.547	6.73	2.15	2.407*
	Drop-out	9.46	3.61		12.26	4.33		3.76	1.46		5.57	2.46	
10	Stay-in	15.22	4.17	3.129**	22.88	5.29	5.505**	5.02	1.91	2.386*	7.44	2.42	2.548*
	Drop-out	12.32	3.76		15.91	5.65		3.91	2.05		6.06	2.23	
11	Stay-in	26.26	4.65	5.920**	29.47	5.98	6.421**	8.08	1.60	5.298**	9.40	1.76	3.220**
	Drop-out	20.46	4.52		21.76	5.02		6.03	2.06		8.16	1.83	

[1] Note: *t* values are based on independent *t* tests performed on *within* grade comparisons.

* $p < .05$
** $p < .01$

TABLE 6

THE NUMBER OF FRENCH COURSE STAY-INS AND DROP-OUTS AS A FUNCTION OF SEX AND GRADE LEVEL (STUDY II)

Sex	Grade					
	9		10		11	
	Stay-in	Drop-out	Stay-in	Drop-out	Stay-in	Drop-out
Male	95	41	84	56	59	35
Female	131	39	129	43	130	29
	$\chi^2 = 2.032$		$\chi^2 = 8.016$ **		$\chi^2 = 11.279$ **	

** $p < .01$

TABLE 7

GROUP MEAN ATTITUDE, MOTIVATIONAL, AND INTELLIGENCE TEST SCORES OF GRADE 9 FRENCH COURSE STAY-INS AND DROP-OUTS (STUDY II)

Variables	Stay-In		Drop-Out		
	$\bar{X}$	SD	$\bar{X}$	SD	t Value[1]
Attitudes Towards Learning French	51.06	13.57	35.83	14.08	8.240**
French Class Anxiety	17.12	6.56	20.56	6.94	-3.832**
General Classroom Anxiety	18.32	6.79	19.16	7.66	-0.890
Interest in Studying Foreign Languages	53.87	9.49	45.08	10.74	6.626**
Rating of Instrumental Orientation	19.44	4.00	15.89	4.49	6.363**
Rating of Integrative Orientation	21.31	4.37	17.11	5.01	6.839**
Motivational Intensity	22.30	3.89	18.22	4.35	7.446**
Desire to Learn French	22.65	4.03	17.96	4.60	8.203**
Parental Encouragement	46.94	11.64	42.95	12.37	2.480*
Attitudes Towards French Canadians	50.07	9.65	44.20	9.97	4.470**
Attitudes Towards European French People	42.99	7.86	41.01	7.68	1.872
Need Achievement	48.35	7.69	45.27	7.13	3.029**
Machiavellianism	31.38	7.89	32.39	7.98	-0.949
Ethnocentrism	29.85	7.25	31.99	8.18	-2.110*
Authoritarianism	42.32	7.82	42.31	6.96	0.014
Anomie	38.50	8.12	39.45	7.02	-0.901
Standardized Intelligence Test Score	66.97	8.04	60.44	9.64	4.403**

[1] Note: t values are the result of independent t tests based on within grade comparisons. Sample sizes fluctuate slightly from scale to scale because of absenteeism during the several testing sessions, however, these variations have been taken into account in determining significance levels.

* $p < .05$

** $p < .01$

TABLE 8

GROUP MEAN ATTITUDE, MOTIVATIONAL, AND INTELLIGENCE TEST SCORES OF GRADE 10 FRENCH COURSE STAY-INS AND DROP-OUTS (STUDY II)

Variables	Stay-In		Drop-Out		*t* Value[1]
	$\overline{X}$	SD	$\overline{X}$	SD	
Attitudes Towards Learning French	52.73	12.08	36.00	14.06	10.191**
French Class Anxiety	17.67	6.44	21.14	6.99	- 4.082**
General Classroom Anxiety	19.44	6.86	20.26	7.39	- 0.9085
Interest in Studying Foreign Languages	54.73	9.55	45.53	10.85	7.161**
Rating of Instrumental Orientation	19.30	4.16	16.94	4.22	4.392**
Rating of Integrative Orientation	21.59	4.44	17.44	4.84	7.050**
Motivational Intensity	22.41	3.52	17.49	4.21	10.509**
Desire to Learn French	23.03	3.77	17.83	3.82	11.024**
Parental Encouragement	47.11	11.09	43.52	12.70	2.400*
Attitudes Towards French Canadians	50.76	10.21	45.97	9.49	3.737**
Attitudes Towards European French People	43.03	7.43	41.04	5.68	2.245*
Need Achievement	49.30	8.17	47.25	8.82	1.9016
Machiavellianism	30.49	8.70	31.60	9.66	- 0.964
Ethnocentrism	28.70	7.78	30.69	7.63	- 2.004*
Authoritarianism	40.98	8.25	40.57	8.09	0.386
Anomie	37.94	7.38	37.22	8.09	0.740
Standardized Intelligence Test Score	66.95	8.71	62.43	7.82	3.840**

[1] Note: *t* values are the result of independent *t* tests based on *within* grade comparisons. Sample sizes fluctuate slightly from scale to scale because of absenteeism during the several testing sessions, however, these variations have been taken into account in determining significance levels.

* $p < .05$

** $p < .01$

TABLE 9

GROUP MEAN ATTITUDE, MOTIVATIONAL, AND INTELLIGENCE TEST SCORES OF GRADE 11 FRENCH COURSE STAY-INS AND DROP-OUTS (STUDY II)

Variables	Stay-In		Drop-Out		
	$\overline{X}$	SD	$\overline{X}$	SD	t Value[1]
Attitudes Towards Learning French	54.29	12.65	37.40	13.40	8.535**
French Class Anxiety	17.24	6.90	20.25	6.66	-2.8597**
General Classroom Anxiety	18.85	7.66	18.10	7.97	0.621
Interest in Studying Foreign Languages	57.06	9.74	47.63	10.15	6.217**
Rating of Instrumental Orientation	18.64	3.83	15.65	4.59	4.810**
Rating of Integrative Orientation	21.57	5.03	18.25	4.37	4.429**
Motivational Intensity	22.46	4.17	20.20	4.72	3.640**
Desire to Learn French	23.67	3.98	20.16	4.72	5.629**
Parental Encouragement	46.17	12.30	40.81	12.13	2.840**
Attitudes Towards French Canadians	53.54	10.11	48.49	9.31	3.307**
Attitudes Towards European French People	45.32	8.43	42.10	4.76	2.724**
Need Achievement	50.50	8.46	48.35	9.86	1.578
Machiavellianism	29.41	9.63	31.75	9.60	-1.580
Ethnocentrism	26.65	7.26	28.56	7.61	-1.684
Authoritarianism	39.40	8.98	40.00	7.80	-0.447
Anomie	37.40	7.16	36.37	7.70	0.913
Standardized Intelligence Test Score	67.42	7.22	65.54	5.98	1.616

[1] Note: t values are the result of independent t tests based on within grade comparisons. Sample sizes fluctuate slightly from scale to scale because of absenteeism during the several testing sessions, however, these variations have been taken into account in determining significance levels.

* $p < .05$

** $p < .01$

TABLE 10

GROUP MEAN PERFORMANCE SCORES ON CATF SUBTESTS OF FRENCH COURSE STAY-INS AND DROP-OUTS AT THREE GRADE LEVELS (STUDY II)

Grade		CATF SUBTESTS											
		Vocabulary			Grammar			Comprehension			Pronunciation		
		$\overline{X}$	SD	t Value[1]	$\overline{X}$	SD	t Value	$\overline{X}$	SD	t Value	$\overline{X}$	SD	t Value
9	Stay-in	11.36	4.68	3.479**	12.11	4.51	2.975**	3.42	1.67	2.499*	5.34	2.41	4.246**
	Drop-out	9.02	3.69		10.21	3.09		2.80	1.44		3.82	2.08	
10	Stay-in	16.34	5.76	6.783**	19.35	6.53	8.364**	5.05	2.02	4.737*	7.24	2.26	6.001**
	Drop-out	11.80	3.98		12.93	4.80		3.86	1.75		5.46	2.52	
11	Stay-in	21.00	5.43	6.242**	23.59	6.92	5.854**	6.87	2.12	5.178**	8.27	2.39	4.558**
	Drop-out	15.77	4.98		17.5	5.23		5.08	2.37		6.60	2.12	

[1] Note: t values are based on independent t tests performed on within grade comparisons.

* $p < .05$

** $p < .01$

TABLE 11

MEAN MLAT SUBTEST PERFORMANCE FOR THREE GRADE LEVELS (STUDY II)

Variable	GRADE 9				
	Stay-in		Drop-out		
	$\bar{X}$	SD	$\bar{X}$	SD	t Value
MLAT - NUMBER LEARN	30.60	8.36	27.10	9.08	2.952**
MLAT - PHONETIC SCRIPT	21.95	3.90	19.84	3.05	4.107**
MLAT - SPELLING CLUES	11.08	6.61	9.52	6.13	1.730
MLAT - WDS. IN SENTENCES	15.15	4.77	12.62	4.55	3.873**
MLAT - P - A	14.71	4.89	13.17	5.09	2.245*

Variable	GRADE 10				
	Stay-in		Drop-out		
	$\bar{X}$	SD	$\bar{X}$	SD	t Value
MLAT - NUMBER LEARN	33.62	7.70	28.56	8.66	4.869**
MLAT - PHONETIC SCRIPT	22.87	3.61	20.90	3.58	4.231**
MLAT - SPELLING CLUES	11.84	6.79	9.52	4.90	2.842**
MLAT - WDS. IN SENTENCES	17.66	5.76	14.42	4.95	4.523**
MLAT - P - A	16.20	5.11	13.51	5.50	3.955**

Variable	GRADE 11				
	Stay-in		Drop-out		
	$\bar{X}$	SD	$\bar{X}$	SD	t Value
MLAT - NUMBER LEARN	33.57	8.20	29.24	9.80	3.310**
MLAT - PHONETIC SCRIPT	23.56	3.75	22.59	3.36	1.745
MLAT - SPELLING CLUES	15.65	7.40	13.45	7.05	1.983*
MLAT - WDS. IN SENTENCES	20.26	6.35	16.28	5.13	4.329**
MLAT - P - A	17.13	4.96	13.03	4.93	5.445**

* $P < .05$
** $p < .01$

TABLE 12

CO-EFFICIENTS OF RELIABILITY (KR_{20}) FOR THE SUB-SCALES MEASURING STUDENT PERCEPTIONS OF "MY FRENCH COURSE" AND "MY FRENCH TEACHER" AT FIVE GRADE LEVELS

	Grade				
	7	8	9	10	11
"My French Course"					
Difficulty	.68	.70	.78	.80	.82
Personal Satisfaction	.80	.84	.87	.87	.86
Utility	.90	.90	.91	.91	.90
Interest	.85	.89	.91	.92	.93
Evaluation	.92	.94	.93	.93	.94
"My French Teacher"					
Evaluation	.94	.94	.95	.96	.94
Competence	.84	.83	.84	.87	.82
Inspiration	.89	.88	.91	.94	.93
Rapport	.93	.84	.87	.92	.89

TABLE 13

GRADE 9 STUDENT REACTIONS TO THE CONCEPTS MY FRENCH COURSE, MY ENGLISH COURSE AND MY FRENCH TEACHER (STUDY II)

Variable	Possible Range	Stay-in		Drop-out		
		$\overline{X}$	SD	$\overline{X}$	SD	*t*
French Course - Difficulty	(6-42)	23.95	6.19	28.52	7.25	-5.163**
French Course - Personal Satisfaction	(4-28)	19.86	5.16	14.40	5.92	7.447**
French Course - Utility	(7-49)	37.05	8.37	28.22	9.74	7.392**
French Course - Interest	(6-42)	26.72	7.78	18.85	8.61	7.195**
French Course - Evaluation	(7-49)	34.44	9.31	23.79	10.34	7.746**
English Course - Difficulty	(6-42)	23.46	6.69	24.40	7.17	-1.007
English Course - Personal Satisfaction	(4-28)	19.55	5.46	19.27	5.85	0.363
English Course - Utility	(7-49)	36.87	8.75	36.26	9.55	0.495
English Course - Interest	(6-42)	26.23	8.22	26.26	9.11	-0.024
English Course - Evaluation	(7-49)	33.35	9.58	32.48	11.60	0.592
French Teacher - Evaluation	(11-77)	59.80	13.61	53.02	18.05	3.207**
French Teacher - Competence	(5-35)	26.75	5.55	24.25	7.63	2.975**
French Teacher - Inspiration	(6-42)	33.36	8.55	29.18	11.23	3.281**
French Teacher - Rapport	(6-42)	34.94	8.37	31.06	10.56	3.159**

** $p < .01$

TABLE 14

GRADE 10 STUDENT REACTIONS TO THE CONCEPTS MY FRENCH COURSE, MY ENGLISH COURSE AND MY FRENCH TEACHER (STUDY II)

Variable	Possible Range	Stay-in		Drop-out		t
		$\overline{X}$	SD	$\overline{X}$	SD	
French Course - Difficulty	(6-42)	24.64	6.68	30.11	6.29	-6.696**
French Course - Personal Satisfaction	(4-28)	19.52	5.09	14.26	6.10	7.787**
French Course - Utility	(7-49)	37.20	8.15	29.59	9.82	7.032**
French Course - Interest	(6-42)	24.87	8.45	17.94	9.11	6.433**
French Course - Evaluation	(7-49)	33.39	9.33	23.47	10.30	8.048**
English Course - Difficulty	(6-42)	24.96	6.69	23.95	6.51	1.222
English Course - Personal Satisfaction	(4-28)	18.82	5.91	19.47	6.50	-0.853
English Course - Utility	(7-49)	36.66	9.69	36.34	10.61	0.257
English Course - Interest	(6-42)	24.74	9.06	25.30	9.92	-0.519
English Course - Evaluation	(7-49)	32.34	10.56	32.73	11.68	0.277
French Teacher - Evaluation	(11-77)	57.54	15.71	49.46	18.04	3.776**
French Teacher - Competence	(5-35)	26.17	6.22	23.46	7.61	3.259**
French Teacher - Inspiration	(6-42)	31.72	10.28	27.03	11.33	3.550**
French Teacher - Rapport	(6-42)	33.96	10.05	29.00	11.09	3.838**

** $p < .01$

TABLE 15

GRADE 11 STUDENT REACTIONS TO THE CONCEPTS MY FRENCH COURSE, MY ENGLISH COURSE AND MY FRENCH TEACHER (STUDY II)

Variable	Possible Range	Stay-in		Drop-out		
		$\bar{X}$	SD	$\bar{X}$	SD	t
French Course - Difficulty	(6-42)	23.28	6.72	28.98	6.28	-5.798**
French Course - Personal Satisfaction	(4-28)	19.67	5.27	16.10	5.51	4.496**
French Course - Utility	(7-49)	37.87	8.17	32.57	9.24	4.200**
French Course - Interest	(6-42)	25.32	8.82	20.93	8.63	3.400**
French Course - Evaluation	(7-49)	34.21	9.56	26.91	9.92	4.899**
English Course - Difficulty	(6-42)	24.81	7.20	24.01	7.01	0.744
English Course - Personal Satisfaction	(4-28)	17.95	6.30	17.30	6.24	0.698
English Course - Utility	(7-49)	35.26	10.56	34.31	10.00	0.611
English Course - Interest	(6-42)	24.05	9.84	22.95	9.36	0.757
English Course - Evaluation	(7-49)	31.24	11.05	29.75	10.62	0.866
French Teacher - Evaluation	(11-77)	61.75	12.65	58.60	12.60	1.577
French Teacher - Competence	(5-35)	27.36	5.75	26.51	4.97	1.034
French Teacher - Inspiration	(6-42)	32.91	9.44	32.33	8.39	0.424
French Teacher - Rapport	(6-42)	35.51	8.85	33.95	8.97	1.196

** $p < .01$

TABLE 16

THE NUMBER OF ACTUAL FRENCH COURSE STAY-INS AND DROP-OUTS AS A FUNCTION OF STATED BEHAVIORAL INTENTIONS AND GRADE LEVEL (STUDY II)

Grade	Intention	Behavior		χ^2
		Stay-in	Drop-out	
9	Stay-in	187	9	183.843***
	Drop-out	2	46	
10	Stay-in	185	12	210.487***
	Drop-out	2	73	
11	Stay-in	157	7	142.077***
	Drop-out	4	36	

*** at 1 df, $p < .001$

TABLE 17

SUMMARY OF THE RESULTS OF STUDIES I & II IN TERMS OF THE BETWEEN GROUP VARIABILITY ACCOUNTED FOR BY EACH VARIABLE[1]

Variable	Grade					
	9		10		11	
	Study I	Study II	Study I	Study II	Study I	Study II
Attitudes Towards Learning French	29	19	51	27	39	25
French Class Anxiety	15	05	14	05	--	03
General Classroom Anxiety	--	--	--	--	--	--
Interest in Studying Foreign Languages	19	13	20	16	28	15
Rating of Instrumental Orientation	15	12	14	06	17	09
Rating of Integrative Orientation	15	14	15	15	23	08
Motivational Intensity	13	17	23	27	26	05
Desire to Learn French	24	19	26	29	37	12
Parental Encouragement	16	02	10	02	09	03
Attitudes Towards French Canadians	05	06	11	05	25	04
Attitudes Towards European French People	04	--	04	01	11	03
Need Achievement	--	03	--	--	11	--
Machiavellianism	--	--	--	--	--	--
Ethnocentrism	--	01	--	01	07	--
Authoritarianism	--	--	--	--	--	--
Anomie	--	--	--	--	04	--
Standardized Intelligence Test	10	10	--	06	n.a.	--
CATF - Vocabulary	06	04	10	13	27	14
CATF - Grammar	--	03	28	19	31	13
CATF - Comprehension	--	02	06	04	23	10
CATF - Pronunciation	05	06	07	11	09	08
MLAT - Number learn	n.a.	03	n.a.	08	n.a.	04
MLAT - Phonetic Script	n.a.	06	n.a.	06	n.a.	--
MLAT - Spelling Clues	n.a.	--	n.a.	03	n.a.	01
MLAT - Wds. in Sentences	n.a.	05	n.a.	07	n.a.	07
MLAT - P - A	n.a.	01	n.a.	05	n.a.	11
French Course - Difficulty	n.a.	09	n.a.	13	n.a.	12
French Course - Personal Satisfaction	n.a.	17	n.a.	17	n.a.	08
French Course - Utility	n.a.	16	n.a.	14	n.a.	07
French Course - Interest	n.a.	16	n.a.	12	n.a.	04
French Course - Evaluation	n.a.	19	n.a.	18	n.a.	10
French Teacher - Evaluation	n.a.	04	n.a.	05	n.a.	--
French Teacher - Competence	n.a.	03	n.a.	03	n.a.	--
French Teacher - Inspiration	n.a.	03	n.a.	04	n.a.	--
French Teacher - Rapport	n.a.	03	n.a.	04	n.a.	--

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[1] Entries are based on the Omega Squared (ω^2) statistic which reflects the proportion of the variability within each grade comparison that is accounted for by a particular variable. ω^2 values were not calculated for any variables that did not produce significant *t* values.

CHAPTER 6

STEREOTYPES AND SECOND-LANGUAGE LEARNING

The purpose of this chapter is to consider the proposition that stereotypes influence second-language learning or alternatively that the process of learning a second language influences stereotypes. Such a proposition focuses not on individual differences, but rather on group beliefs or images and is consequently considerably different from the general hypotheses considered in the previous chapters. The possible pedagogical implications of any such relationship, if it does exist, are so important however that a precise explication of the concept of stereotype and the potential effects that stereotypes might have are necessary.

The term stereotype has various meanings for different people and considerable argument has taken place over just what is meant by the word. In the psychological literature, however, there is general agreement as to what constitutes a stereotype by those conducting research in the area even though one researcher (Brigham, 1971) has argued that the concept of the stereotype as investigated by researchers is so different from the concept as understood by the general population that the research is not meaningful. Others (see Gardner, 1973; Gardner, Rodensky and Kirby, 1970) have disagreed, however, indicating the psychological implications of the concept of the stereotype as conceived by researchers in the area.

What then is a stereotype? As used here, and in the bulk of the empirical studies, the concept of the stereotype refers simply to consensual beliefs about the attributes of a social object. The first study of stereotypes was concerned with stereotypes about ethnic or racial groups and has served as the model for many subsequent studies. In that study, Katz and Braly (1933) presented students with 84 adjectives and 10 ethnic group labels and asked them to select those adjectives which they felt characterized each of the ethnic groups. The stereotype about each ethnic group was defined in terms of the 12 attributes chosen most frequently. That is, the stereotypes focused on the consensual beliefs about the different groups. Furthermore, it was observed that the stereotypes about the groups differed in terms of the amount of agreement or consensus that the students exhibited. In the Katz and Braly (1933) study, the stereotype about Negroes was much more consensual than was that about Turks, indicating that the stereotypes differed in their clarity in that the students agreed more in their images about some groups than others.

Research of this type has been conducted many times using the general model initiated by Katz and Braly (1933). It would serve little purpose here to list all the studies, but reference to the various reviews of the stereotype literature will uncover many of them. Examples of such review articles are Fishman (1956), Brigham (1971), Gardner (1973), and Gardner, Rodensky and Kirby (1970).

Studies using the Katz and Braly (1933) methodology have noted, over the years, a growing reluctance on the part of subjects to follow the instructions to select words to characterize various groups. Although Katz and Braly (1933) make no mention of subjects refusing to do the task, Gilbert (1951) and Karlins, Coffman and Walters (1969) report considerable dissatisfaction. There is little evidence to suggest that this reluctance is due to the fact that individuals no longer have stereotypes. It seems more likely that individuals are merely more test-wise, and that the request to select adjectives to characterize various groups is seen as too black-and-white. To overcome this difficulty, Gardner, Wonnacott and Taylor (1968) suggested an innovation in the assessment of stereotypes. Rather than have subjects select attributes to characterize an ethnic group, they requested that individuals rate an ethnic group concept on a series of semantic differential (Osgood, et. al., 1958) scales. A semantic differential scale consists of two bipolar adjectives separated by seven response categories. The following is a semantic differential scale comprised of the bipolar adjectives friendly-unfriendly. The numbers on the scale are not presented to the subjects but are included here to facilitate explanation.

Friendly __1__ __2__ __3__ __4__ __5__ __6__ __7__ Unfriendly

Subjects are asked to rate the concept (e.g., French Canadians) along this scale to the extent that they perceive one or the other bipolar adjectives associated with it. If, for example, a subject perceived friendly as being strongly associated with French Canadians they would check alternative 1. If they felt friendly was moderately associated with French Canadians they would check alternative 2, and they would check alternative 3 if they believed friendly was slightly associated with French Canadians. Alternative 4 would be checked if the subjects felt that the scale friendly-unfriendly was not appropriate to rating the concept, French Canadians, or if they felt friendly and unfriendly were both equally associated with French Canadians. Scale positions 5, 6, and 7 refer respectively to whether subjects feel that unfriendly is slightly, moderately, or strongly associated with French Canadians. Using this technique, Gardner, Wonnacott and Taylor (1968) argued that investigators could determine the extent to which all adjectives presented were associated with an ethnic group label. They suggested further that if any individuals objected to assigning attributes to ethnic group labels they could consistently check alternative 4. An example of the complete instructions for this technique as well as typical semantic differential scales are presented in Appendix A.

In order to determine the stereotype about each ethnic group, Gardner, Wonnacott and Taylor (1968) suggested that an investigator could determine those scales for which all subjects tended to agree in localizing their ratings toward one end. In order to assess such polarization, Gardner, Wonnacott and Taylor suggested the use of Student's (1908) t-statistic:

$$t = \frac{\bar{x} - \mu}{S/\sqrt{n}}$$

where: $\bar{x}$ = the mean rating on a particular scale.

μ = the value which would be expected if ratings on the scale were truly random in that neither bipolar adjective was seen as appropriate to the concept. This was interpreted as 4 on the seven point scale.

S = the standard deviation of the ratings on the particular scale.

n = the number of subjects.

Use of this statistic permits an investigator to determine whether the subjects as a group tend to agree in localizing their ratings on any semantic differential scale. If subjects do not agree, then it would be expected that $\bar{x}$ would be approximately equal to 4, and t would approach 0. As t departs significantly from 0, this would indicate that the ratings tend to localize toward one of the two ends of the scale. If the value of t were a large negative number, this would indicate that the majority of the ratings were placed in alternatives 1, 2, and 3 (toward friendly in our example). If t had a large positive value, it would indicate that the ratings tended to cluster around 5, 6 and 7 (toward unfriendly in our example). The use of Student's t permits the experimenter to determine how significant the departure of $\bar{x}$ is from μ (or 4), but subsequent use of this approach (see Gardner, 1973) has placed emphasis only on those 10 scales with the greatest polarity, assuming that the polarization is significant. The stereotype then is defined by those 10 adjectives toward which polarization of ratings is most pronounced.

Although this methodology might appear considerably different than the traditional technique for assessing stereotypes suggested by Katz and Braly (1933), both procedures focus on determining consensual beliefs about a social object. The Katz and Braly (1933) technique requires individuals merely to select attributes from a list and defines the stereotype in terms of those attributes selected most frequently. The procedure described here, on the other hand, requires individuals to rate the extent to which attributes are associated with a social object and defines the stereotype in terms of those attributes most highly associated with the social object. One would expect, therefore, that the results obtained with both techniques would be comparable. In point of fact, that was precisely the finding of one study conducted to test this notion (Gardner, Kirby, Gorospe, and Villamin, 1972). In that study, it was found that, particularly when the stereotype was highly consensual, the two techniques provided highly comparable assessments. As a result, it was suggested that the newer procedure was probably a more sensitive index of the consensual aspects of the stereotype because it permits the investigator to determine how each individual responded to each attribute presented. The Katz and Braly technique, on the other hand, gives the investigator information only about the attributes individuals actually select. If an individual does not select a particular attribute to characterize a particular social object, the investigator cannot determine whether it was due to an oversight, the belief that an opposite attribute would be more appropriate, or merely that the individual simply didn't feel the attribute itself was appropriate.

Numerous studies have made use of the new technique described here. Gardner, Wonnacott and Taylor (1968) investigated the extent to which attitudes toward French Canadians were related to an individual's tendency to adopt the stereotype about French Canadians. They found that, in fact, this tendency was independent of attitudes toward French Canadians. A similar conclusion is warranted from a study by Gardner, Taylor and Feenstra (1970) which investigated reactions to both French Canadians and English Canadians, as well as one by Lay and Jackson (1972) which also studied reactions to French Canadians. Furthermore, cross-cultural support was obtained by Gardner, Kirby and Arboleda (1973) who investigated reactions to the Chinese in the Philippines. A similar conclusion seems appropriate from a study (Kirby and Gardner, 1973) which investigated the stereotypes of children and their parents even though children tended to be more evaluative than their parents in their reactions to ethnic groups.

There are many implications which follow from the observation that the tendency to stereotype a group is independent of attitudes toward that group. Perhaps the most important, however, is that such stereotypes are assumed to be widespread in the community (i.e., they are consensual beliefs) and if their adoption is independent of attitudes it suggests that individuals are influenced by some aspects of the community regardless of their attitude toward the group. That is, assume the stereotype in the community about some group is that they are aggressive and proud. If the individual's adoption of this stereotype is unrelated to his attitudes toward the group, it means that an individual with positive attitudes as well as one with negative attitudes toward the group could hold the same stereotype. This indicates the truly insidious nature of stereotypes. Regardless of their validity, they are accepted as truths by the majority (but not all) of the members of the community and this acceptance is not related (as it is often assumed to be) to attitudes. Some results (see Kirby and Gardner, 1972) suggest that their adoption is related to a reliance on information sources, such as the school or the mass media, in the environment though the psychological significance of this finding is not clear.

The independence of attitudes from the willingness or tendency to subscribe to the stereotype should not be taken as implying that stereotypes do not have attitudinal or evaluative connotations. Clearly if the stereotype about an ethnic group is particularly positively or negatively evaluative, it would indicate that the attitude of the community is respectively positive or negative. It would seem, however, that this attitude has become part of the community image of the ethnic group concerned, and doesn't necessarily reflect itself in the individual's attitude toward that group.

If it is accepted that stereotypes do reflect a community's attitude though not necessarily the attitudes of the individual, this could have implications for second-language acquisition in that they could indicate the general orientation of the cultural community towards learning the language of that ethnic group. Where the stereotype is positively evaluative it is reasonable to expect that the community would be more favourably predisposed toward learning the language than where the attitude is unfavourable. Furthermore, there is considerable evidence to suggest that individuals will respond to members of ethnic groups in terms of the community stereotypes about that group. Thus, Secord, Bevan and Katz (1956) demonstrated that once an individual identified a stimulus person as a Negro (regardless of the degree of Negroid characteristics) he attributed stereotypic negroid characteristics to that person. Furthermore, Gardner and Taylor (1968) found that individuals perceived a French Canadian speaker in terms of the stereotype about French Canadians, even when the speaker described himself in a manner which contradicted the stereotype, especially when peers appeared to support their perceptions. Similar results were obtained by Taylor and Gardner (1969) though antistereotypical self-descriptions tended to attenuate these perceptions under highly credible situations.

Such findings attest to the insidious nature of stereotypes in that they tend to mold an individuals perception of the world. Moreover, they tend to act somewhat as a perceptual screen orienting the individual to ignore or at least discount contradictory information. It might be expected therefore that such beliefs may be resistant to change regardless of differing amounts of information.

Although much of the preceding material is concerned with stereotypes about ethnic groups, it should be obvious that stereotypes, as consensual beliefs, can exist with respect to all social objects. Although it does not appear to have been studied there probably exists a relatively clear cut stereotype about dogs!

In this chapter, we are concerned with the stereotypes about five concepts, French Canadians, English Canadians, the French Teacher, the French Course, and the English Course. In this respect, two general questions can be raised. First, are there clear stereotypes, or consensual beliefs, about each of these concepts? Such a question seems particularly meaningful with respect to the second-language learning situation and one which has been considerably ignored. But language teachers and educators might well be interested in whether such stereotypes exist, and if so, in the nature of the stereotypes. Particularly with respect to the concepts of the French Teacher and the French Course, it would seem important to determine how students as a group tend to view these concepts. Are French Teachers viewed as creative and organized by their students or are they seen as somewhat uncreative and disorganized? Is the French Course perceived as difficult or easy? The implications of such perceptions for second language teaching are many Similarly, perceptions of French Canadians might appreciably influence the relative success of a French language program. Perceptions of English Canadians and the English Course might not influence reactions to the learning of French, but they do offer important points of comparison for the other concepts.

A second question which seems important is simply to what extent does second language training modify these stereotypes? Today, many second-language programs have as one of their objectives the aim of teaching students about the second-language community and modifying (or correcting) their images and impressions about it. It remains to be seen, however, whether such experience does in fact modify these beliefs, or in fact the beliefs about other concepts of the type referred to above.

The data to be presented here are derived from the study described in Chapter 4. Since the sample sizes and the entire methodology was described there, it will not be repeated here. The stereotypes to be described were determined from the material gathered by means of the semantic differential. The semantic differentials used in that study are reproduced in Appendix A. It should be noted that similar analyses were performed on the data obtained from the study described in Chapter 3. Since the results are highly comparable to those obtained in the study described in Chapter 4, even though the scales were modified somewhat, only the data derived from the latter study will be described here.

In the sections to follow the stereotypes are presented for each grade tested (grades 7 to 11) for each concept, French Canadians, English Canadians, the French Teacher, French Course and English Course. In each case, the stereotypes are assessed by determining those attributes towards which the subjects tended to localize their ratings. This polarization was determined by means of the t-statistic described earlier in this chapter.

French Canadians

Table 1 presents the stereotypes for each grade for the concept French Canadians. To facilitate discussion, all the attributes obtained in the stereotypes of any grade are presented, and those appearing in a particular grade are indicated by an asterisk.

Insert Table 1 About Here

Inspection of Table 1 will reveal a considerable degree of similarity in the stereotypes of the different grades. The least amount of similarity occurs in the stereotypes for grades 8 and 11 in which four attributes are common in the stereotypes of the two grades. The most amount of similarity involves grades 7 and 8 where nine of the ten attributes in each list are common. In short the overlap in the stereotypes varies from 40% to 90% with a mean over all possible comparisons of 66% indicating a considerable agreement among all the grades of the stereotype about French Canadians. One implication of such a finding is that despite any information about French Canadians which might be obtained by continued presence in the French course, stereotypes are not materially influenced. On the other hand, however, it might also merely indicate that the material about French Canadians presented in the French Classes reinforces the stereotypes held in the community. Consider, if you will, the significance of this conclusion!

This latter interpretation is supported when the content of the stereotypes is considered. All five grades perceive French Canadians as friendly, cheerful and talkative. Furthermore, the attributes proud and likeable are seen as characteristic of French Canadians by four of the five grades, proud being excluded by the grade 8 Ss, and likeable by the grade 10 Ss. Except for these two attributes a clear pattern exists for all other characteristics chosen by two or more classes. Thus, students in grade 7, 8, 9, and 10 also agree that French Canadians are kind and active, whereas these attributes are not included in the stereotypes of the grade 11 students. Similarly, grades 7, 8, and 9 agree that polite characterizes French Canadians though students in grades 10 and 11 don't share this perception. Finally, students in grades 7 and 8 (but not 9, 10 and 11) perceive French Canadians as ambitious and honest. That is, there is a clear indication that various attributes tend to be eliminated from the stereotype as the students become older and obtain more experience with the French Course. The data also indicate, however, that increases in age tend to result in additions to the stereotype. Thus, beginning at grade 9, emotional and religious are added to the stereotypes while artistic is added at grade 10. In each instance they are included in the stereotypes of the older students. Furthermore, it would seem more than an accidental happenstance that the attributes which are added in the later grades, and those which are characteristic of all grades, are in fact those that characterize the stereotype of the local adult community (see Gardner, Wonnacott and Taylor, 1968). Such results indicate that with increasing age, the children simply take on the stereotypes of the larger community. This pattern has been obtained in previous studies (Blake and Dennis (1943); Kirby and Gardner, 1973), and its presence here despite the fact that all students were studying French (and therefore were highly selected in terms of their attitudinal characteristics as indicated in Chapter 5), indicates that such experience with the French program does not materially influence stereotypes.

English Canadians

Table 2 presents the stereotypes about English Canadians obtained from

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Insert Table 2 About Here

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each of the five grades. Inspection of the table will reveal that the stereotypes are highly comparable across the different grades. In fact the mean overlap among all possible comparisons is 75%. In three comparisons of the grades, 9 with 10, 9 with 11 and 10 with 11, 9 out of ten (90%) of the attributes are common. In fact, an overlap of 6 out of 10 characteristics represents the least degree of agreement (grades 7 with 9, and 7 with 11). It is obvious, therefore, that stereotypes about the in-group are relatively consensual across age, and that there are few if any clear developmental trends.

This is suggested by simply observing the content of the stereotypes. Cheerful, loyal, likeable and modern are contained in the stereotypes of all five grades. Friendly is in the stereotypes of all grades except the last (grade 11) while ambitious and proud, though not contained in the grade 7 stereotype is included in that from all the other grades. This is not particularly indicative of any consistent change in the stereotypes over age, nor is any particular pattern evident in the remaining attributes listed in Table 2. Athletic is selected by every grade except grade 8 while intelligent is contained in the stereotypes of grades 7, 10, and 11 and pleasant is included in the stereotypes of the students in grades 8, 9, and 11. One might be tempted to conclude possibly that the stereotypes become generally more positively evaluative with age, and could note that the attribute good is introduced at grade 9 and maintained thereafter. But it could be equally noted that of three attributes contained in the stereotype of the grade 7 students, kind, active, and polite, two are clearly positive in evaluative tone and of these, one (kind) drops out of the stereotype after grade 8, while the other (polite) occurs only at the grade 7 level. (It might also be noted that active is eliminated following grade 8.)

Although no consistent change in the stereotype of English Canadians is evident in Table 2, it does seem quite clear that a major characteristic of the stereotype of English Canadians (the in-group) is that it is extremely favourable as is the stereotype about French Canadians.

Before considering the stereotypes derived about the other three concepts, some attention might profitably be paid to the implications of the results presented to this point considering the stereotypes of the two major linguistic/cultural groups in Canada. One important observation which should be made is that the overall stereotype of both groups is quite favourable. If it is accepted that stereotypes reflect the beliefs in the community, and that such beliefs about the second-language community could influence students' approach to the language course and thus their achievement, it would be expected that the general level of achievement of these students in French would be reasonably high. Although that definitely fits the impressions of the investigators, impressionistic data are not particularly scientific. What is required is another group of students from another community where the stereotypes about French Canadians are not as positive as those obtained here. Such data are not available from this study, though towards the end of this chapter an approximation to it is presented (see Stereotypes of Successful and Unsuccessful Students). For now, suffice it to say that the stereotypes about French Canadians (as well as English Canadians) are quite favourable, and that this evaluative aspect of the stereotypes could auger well for the general success of the French program in this area.

Another important consideration is that although there is a clear indication that the stereotypes about French Canadians change in a meaningful pattern over the grades, the nature of the change is to become like the stereotype in the larger community (see Gardner, Wonnacott and Taylor, 1968). It seems unreasonable to attribute this to the nature of the French course since similar findings have been obtained solely with children increasing in age (cf., Blake and Dennis, 1943; Kirby and Gardner, 1973). One therefore might ask whether the various French courses are successful in modifying children's images of the French speaking community. Do they simply reinforce the stereotypes already extant in the community?

A third consideration has to do with reactions to the in-group, English Canadians. Lambert (1969) has suggested that training in a second language can influence an individual's perception of his in-group as well as the other language community, while in Chapter 5 we demonstrated considerable differences at each grade level between those who continue studying French as opposed to those who drop out. The finding here, therefore, that the stereotype about the in-group does not change appreciably indicates that such individuals tend to maintain their own community's stereotypes, at least about the in-group. Of course, we have already noted that their stereotypes about the other language community evidence typical developmental trends. One must conclude therefore that the experience of learning a second language does not materially influence Ss stereotypes (viewed as consensual beliefs) quite probably because of their pervasiveness in the community.

French Teacher

To a considerable extent, it might be argued that it is not meaningful to determine stereotypes about the concept, French Teacher, since the referent varies from class to class. On the other hand, it is meaningful to ask whether there are common impressions (i.e., stereotypes) about the French Teacher. The results, presented in Table 3, clearly indicate the value of such an approach.

Insert Table 3 About Here

Seventeen different attributes were associated with the concept French Teacher over the five grades and the average agreement among all five grades was 68%. More importantly, there is considerably higher agreement among grades 9, 10, and 11 than between grades 7 and 8 and between these grades and the later ones. In short, as students progress in the language, they develop a very definite stereotype about their French teacher which might reflect more consistent patterns of behavior among French teachers at the secondary school level, or greater homogeneity among students at this level. Remember that in Chapter 5, it was demonstrated that those who continue in the French course differ attitudinally from those who drop out.

Moreover, when one considers the nature of the attributes contained in the stereotypes it is clear that a major characteristic of them is that they are positively evaluative. It will be recalled from Chapter 5, that the semantic differential scales presented were selected to obtain indices of Evaluation, Competence, Rapport and Inspiration. The number of scales associated with each of these indices were 11, 5, 6, and 6 respectively. In the stereotype reported, here, however 11 of the 17 attributes are from the positive end of the evaluative scales. Students agree in their positive evaluation of their French teachers! Moreover four of the remaining attributes emphasize competence! The scales are clearly highly related, but another more intriguing aspect of this analysis is that there is a tendency from grade 7 to 11 to play down the general positive evaluation, and play up the competence. That is, the number of evaluative attributes in the stereotypes are 7, 6, 5, 5, and 5 respectively for grades 7 to 11 while the number of attributes stressing competence are 3, 2, 4, 4, and 4 for the five grades. Note, for example at the grade 7 level, seven of the attributes stress a general positive evaluation, while 3 stress competence. At the grade 11 level, on the other hand five stress evaluation, four stress competence.

All grades evidence a very positive evaluation of the teacher. That is clear! But, the older students focus more on the competence of the teacher. It seems reasonable that such a pattern derives from the general motivation on the part of the more advanced students to develop their skill in French, and from their appreciation of the skill of their teachers in promoting this development.

French Course

The stereotypes about the French Course are very uniform across all grade levels. Inspection of Table 4 will reveal considerable overlap in the stereotypes

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Insert Table 4 About Here

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among all grades, and in fact the mean overlap is 83%. Furthermore, seven of the 15 attributes in the list are common to all grades. It is clear, therefore, that a consistent and uniform stereotype of the French course exists across the five grades sampled.

When attention is focused on the characteristics of the attributes contained in these stereotypes, the reason for this uniformity becomes clearer. It will be recalled that in Chapter 5 the description of the semantic differential scales indicated that for this concept, scales were included to assess five classes of reactions to the French course, Evaluation, Utility, Personal Satisfaction, Interest and Difficulty. The number of scales appropriate to each of these five classes were 7, 7, 4, 6, and 6 respectively. When the stereotypes are interpreted in terms of these classes of reactions, it becomes extremely clear that students focus on the Utility of the French Course, and that they agree that the course is extremely useful. Of the 10 attributes in the stereotype of the grade 7 students, five of them reflect Utility. Furthermore, with increasing grade there is an increased focus on Utility. At the grade 11 level, seven of the attributes emphasize Utility, and this exhausts the Utility scales presented. From this, it seems reasonable to conclude that the consensual impression of students in the French course is that it is a Useful course, and moreover that this impression becomes strengthened as students progress in the program. None of the other classes of reactions contribute that strongly to warrant further discussion. What is evident, however, is that the general impression about the French course gained by inspection of the attributes is the favourableness of reactions. All grades agree, for example, that the French course is educational, useful, important, meaningful, informative, organized, and valuable and four of the five grades are in agreement that it is acceptable and necessary. Such an impression is clearly one of which French Teachers might be proud, however as will be seen later the English course has a similar image. If attention is focused on the remaining attributes, moreover, a meaningful differential pattern does emerge. Grade 7 students see the French Course as imaginative and nice, while the grade 8 students substitute rewarding. Clearly, these students emphasize positive characteristics in their perception of the course. Remember, however, that for the most part these students are in an oral/aural program in which they experience the pleasure of communicating simple ideas in a new language. It seems particularly significant that hard is introduced to the stereotype at the grade 9 and 10 level, and complicated at the grade 10 level especially when it is realized that it is here where the focus is on the more structural aspects of the language. Finally, progressive is introduced at grade 11 where presumably those students remaining in French have mastered the basic structural components of French and are oriented towards consolidating language skills.

English Course

This concept was introduced largely as a control to aid in clarifying the interpretation of the stereotype of the French course. And it is obvious that the introduction of this control was beneficial. Inspection of Table 5 will reveal important similarities and differences between consensual reactions to the English and French courses. Of the 12 attributes contained in the stereotypes of English Course, 10 are common to the stereotypes of the French Course. These attributes include important, educational, useful, necessary, valuable, meaningful,

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Insert Table 5 About Here

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acceptable, informative, progressive, and organized. Seven of these stress Utility, thus it is clear that for both the French course and the English course, students agree on emphasizing the usefulness of the course. Such results would seem to allay the fears of those critics who doubt that students perceive the usefulness of, at least, some courses in which they find themselves registered.

The differences between students' reactions to the English and French courses are also of some interest. There is nothing in the stereotypes of the English course to indicate that the students agree that the course is difficult. This does, as we have already seen however, characterize the stereotypes about the French course, especially at the grade 9 and 10 levels. It is not unreasonable that the stereotypes about the two courses should evidence some differences, nonetheless it seems important that these differences were obtained. The implication is that acquiring the language of another group is perceived as more of a challenge than perfecting skills in one's own language.

Inspection of Table 5 will also reveal that there is considerable agreement in the stereotypes about the English course over all grade levels. The mean overlap is 88% indicating that the stereotypes at the different ages are uniform. Changes in grade have no appreciable influence on the stereotypes about the English course.

Implications of the Stereotypes

Viewing the stereotypes of the five concepts, it becomes apparent that meaningful consistent patterns emerge. For the two ethnic group concepts, French Canadians and English Canadians, it is obvious that exposure to the French course has little if any effect. There are characteristic patterns in the two stereotypes in that those for English Canadians show greater consistency over grades than those for French Canadians. Previous research (Kirby and Gardner, 1973) has indicated that stereotypes about the in-group develop more rapidly in children, and the greater consistency obtained here supports that finding. With the stereotype well defined, increasing age would have little effect in modifying the stereotypes. Furthermore, although a definite change in the stereotypes about French Canadians occurs over grades, the data reflect a change in the stereotypes which conforms to those in the adult community. This, too, has been previously documented (Kirby and Gardner, 1973). Exposure to the French program seems merely to be accompanied by changes in the stereotypes which are to be expected with age. One might conclude therefore that the French course does not result in changes in students' images of French Canadians which differs from those in the larger community. It may be that the content of the French course provides information about French Canadians, but the stereotypes reinforced by this information are those which already exist in the community. The stereotypes are not made any different.

Exposure to the French course does have some effect on stereotypes about the French teacher, and the French course, some of which can be attributable simply to age and some of which may be due to the experience itself. Students proceding through the French program demonstrate greater agreement in their perceptions of the competence of their French teachers and the usefulness of the French courses, though the stress on the utility of the French course may reflect simply a greater maturity of the students since they also perceive the English course as a useful one. There is, however, a period (grades 9 and 10) when students become impressed with the difficulty of the French course, and this is not reflected in their reactions to the English course. This would seem to emphasize a phenomenon, referred to earlier, that after the initial pleasure of experiencing second-language training wears off, it does become a difficult task. It would seem clear, therefore, that designers of second-language programs should recognize this period, and introduce remedial steps to help students over these difficult times. Furthermore, additional research directed towards assessing consensual beliefs of students, at differing levels of French training, toward different concepts related to the acquisition of French might uncover beliefs which operate within these programs.

Earlier it was suggested that since stereotypes represent consensual beliefs, their investigation could uncover differences between one community and the next which might influence the progress of second-language acquisition. Such research cannot be described here since all of these data were gathered in the same geographical area. Nonetheless, an indirect assessment of this phenomenon can be made if attention is directed towards the differential stereotypes of successful and unsuccessful students. In the section to follow, the stereotypes of successful and unsuccessful French students are presented to indicate the general relationships which might be expected between stereotypes on the one hand and French achievement on the other.

Stereotypes of Successful and Unsuccessful Students

In order to determine whether stereotypes are related to French achievement, the data from the present study were reanalyzed. For each grade level, it was necessary to differentiate between successful and unsuccessful students. This differentiation was made by determining total scores on the major objective indices of French achievement at each grade level, and forming two groups, viz., those obtaining high scores (approximately the top one-third of the distribution), and those obtaining low scores (the bottom third). For the grade 7 and 8 students, the index of French achievement was derived from total scores on the four French Achievement subtests, Vocabulary, Grammar, Sentence Understanding and Paragraph Comprehension, while for the grade 9-11 students the total scores were obtained by summing the four CATF subtests. The number of highs and lows were as follows, grade 7 (66 and 92), grade 8 (64 and 74), grade 9 (70 and 87), grade 10 (106 and 100), and grade 11 (111 and 87).

To determine the stereotypes, the t-test of polarity was computed for each group separately. In this section, only the stereotypes about French Canadians will be discussed, though similar analyses could be done for all the other concepts. Attention is directed toward stereotypes of French Canadians only since this does represent a reanalysis of data already presented and it would seem superfluous to extend this analysis to all concepts. This important consideration here, is whether stereotypes about the other language community is related to language achievement.

Tables 6 - 10 present the stereotypes of the successful and unsuccessful students at each grade level. In the tables, the absolute t-values are presented. It will be recalled that the magnitude of the t-statistics indicates the degree to which the students agree in ascribing an attribute to French Canadians.

Insert Tables 6-10 About Here

Inspection of the tables will reveal a startling finding. In all but one case (grade 9) the successful students demonstrate more agreement in their stereotypes and even there the pattern is clear. In general, the lowest t-value for the successful students is higher than the highest t-value for the unsuccessful students! In short, the successful students have a much more uniform stereotype. It might be suggested, that just as the successful students are better in acquiring their knowledge of French, they are also acquiring a more uniform image of French Canadians. In fact, the t-values associated with the unsuccessful students are generally so low as to suggest that they do not have a uniform stereotype about French Canadians. In general, they evidence considerable disagreement about what French Canadians are like.

There is little in the content of the stereotypes which helps to explain the reason for this pattern. There is the suggestion that for the younger students (grades 7 to 8), the stereotypes of the unsuccessful students overlap more with the stereotypes for the entire group than those of the successful students. But the reverse is true for the students in grade 9 and 10, and there is no difference in this respect for the successful and unsuccessful students in grade 11. Furthermore, although the stereotypes of the successful and unsuccessful students are highly similar at grade 7 (8 attributes in common), they are generally less similar at the higher grades (overlaps of 4, 6, 4 and 4 respectively). One suggestion is that at the beginning of the French program, the students are in fact relatively homogeneous in terms of French knowledge, their stereotypes tend to be comparable, and reflect the characteristic pattern at that grade. By grade 9, students are beginning to self-select themselves in terms of a potential interest in learning French, and those who do not have beliefs which coincide with the majority of the class, experience difficulties in reconciling their beliefs with those of the rest of the class, and at the same time find difficulty with maintaining a reasonable level of competence. This conforms with the results presented in Chapter 5, and it is to be expected that such students might drop out of French. By grade 11, the students would be expected again to be relatively more homogeneous in that they have expressed a long time interest in French, even though some are less successful than others in acquiring this knowledge. The successful and unsuccessful students might then tend to have somewhat different images about French Canadians though they do reflect the general consensus in the class.

The results are not inconclusive, but they do suggest a possible relationship between the nature of the stereotypes about the other language community and achievement in French. A more meaningful test of this hypothesis would be afforded by selecting different communities, determining their stereotypes and the general level of achievement of the students in the French programs.

TABLE 1

STEREOTYPES ABOUT FRENCH CANADIANS

Attribute	Scale Classification	Grade 7	8	9	10	11
friendly	Evaluative	*	*	*	*	*
cheerful	Evaluative	*	*	*	*	*
talkative		*	*	*	*	*
kind	Evaluative	*	*	*	*	
active		*	*	*	*	
proud		*		*	*	*
likeable		*	*	*		*
polite	Evaluative	*	*	*		
emotional				*	*	*
religious				*	*	*
ambitious		*	*			
honest	Evaluative	*	*			
artistic					*	*
good	Evaluative		*			
pleasant	Evaluative				*	
colourful						*
sensitive						*

TABLE 2

STEREOTYPES ABOUT ENGLISH CANADIANS

Attribute	Scale Classification	Grade 7	8	9	10	11
cheerful	Evaluative	*	*	*	*	*
loyal	Evaluative	*	*	*	*	*
likeable		*	*	*	*	*
modern		*	*	*	*	*
friendly	Evaluative	*	*	*	*	
athletic		*		*	*	*
ambitious			*	*	*	*
proud			*	*	*	*
good	Evaluative			*	*	*
intelligent		*			*	*
pleasant	Evaluative		*	*		*
kind	Evaluative	*	*			
active		*	*			
polite	Evaluative	*				

TABLE 3

STEREOTYPES ABOUT FRENCH TEACHER

Attribute	Scale Classification	Grade 7	 8	 9	 10	 11
friendly	Evaluative	*	*	*	*	*
polite	Evaluative	*	*	*	*	*
helping	Competence	*	*	*	*	*
intelligent	Competence	*	*	*	*	*
organized	Competence	*		*	*	*
reliable	Evaluative		*	*	*	*
interested	Inspiration		*	*	*	*
efficient	Evaluative			*	*	*
competent	Competence			*	*	*
sincere	Evaluative	*	*			
cheerful	Evaluative	*	*			
pleasant	Evaluative	*				*
dependable	Evaluative		*		*	
considerate	Evaluative	*				
creative	Evaluative	*				
sensitive	Rapport		*			
good	Evaluative			*		

TABLE 4

STEREOTYPES ABOUT FRENCH COURSE

Attribute	Scale Classification	Grade 7	8	9	10	11
educational	Utility	*	*	*	*	*
organized	Difficulty	*	*	*	*	*
useful	Utility	*	*	*	*	*
important	Utility	*	*	*	*	*
valuable	Evaluative	*	*	*	*	*
meaningful	Utility	*	*	*	*	*
informative	Utility	*	*	*	*	*
acceptable	Personal Satisfaction	*	*	*		*
necessary	Utility		*	*	*	*
hard	Difficulty			*	*	
imaginative	Interest	*				
nice	Evaluative	*				
rewarding	Personal Satisfaction		*			
complicated	Difficulty				*	
progressive	Utility					*

TABLE 5

STEREOTYPES ABOUT ENGLISH COURSE

Attribute	Scale Classification	Grade 7	8	9	10	11
important	Utility	*	*	*	*	*
educational	Utility	*	*	*	*	*
useful	Utility	*	*	*	*	*
necessary	Utility	*	*	*	*	*
valuable	Evaluative	*	*	*	*	*
meaningful	Utility	*	*	*	*	*
acceptable	Personal Satisfaction	*	*	*	*	*
good	Evaluative	*	*	*		*
informative	Utility	*		*	*	*
progressive	Utility		*		*	*
organized	Difficulty		*	*	*	
satisfying	Personal Satisfaction	*				

TABLE 6

STEREOTYPES ABOUT FRENCH CANADIANS

Grade 7

HIGH FRENCH ACHIEVERS

	French Canadians	T-value
1.	proud	-11.57
2.	cheerful	-11.24
3.	talkative	-10.48
4.	likeable	10.18
5.	ambitious	- 9.78
6.	sensitive	9.66
7.	friendly	9.52
8.	religious	- 9.27
9.	kind	- 8.97
10.	active	- 8.50

LOW FRENCH ACHIEVERS

	French Canadians	T-value
1.	cheerful	- 8.23
2.	friendly	6.82
3.	kind	- 6.73
4.	likeable	6.31
5.	proud	- 5.90
6.	pleasant	- 5.70
7.	polite	- 5.61
8.	ambitious	- 5.59
9.	talkative	- 5.40
10.	active	5.39

TABLE 7

STEREOTYPES ABOUT FRENCH CANADIANS

Grade 8

HIGH FRENCH ACHIEVERS			LOW FRENCH ACHIEVERS		
	French Canadians	T-value		French Canadians	T-value
1.	kind	-10.42	1.	friendly	6.69
2.	talkative	- 9.51	2.	kind	- 6.62
3.	proud	- 9.36	3.	talkative	- 6.38
4.	sensitive	8.77	4.	active	6.36
5.	honest	- 8.71	5.	likeable	6.30
6.	active	8.32	6.	honest	- 6.17
7.	trustworthy	- 8.24	7.	loyal	6.02
8.	religious	- 8.22	8.	ambitious	- 5.73
9.	polite	- 8.12	9.	polite	- 5.65
10.	good	7.82	10.	cheerful	- 5.38

TABLE 8

STEREOTYPES ABOUT FRENCH CANADIANS

Grade 9

HIGH FRENCH ACHIEVERS

French Canadians	T-value
1. cheerful	- 9.14
2. talkative	- 8.49
3. proud	- 8.25
4. likeable	7.99
5. active	7.88
6. polite	- 7.69
7. religious	- 7.58
8. emotional	7.36
9. kind	- 7.11
10. sincere	- 6.78

LOW FRENCH ACHIEVERS

French Canadians	T-value
1. likeable	6.81
2. talkative	- 6.63
3. athletic	- 6.43
4. friendly	5.98
5. cheerful	- 5.72
6. religious	- 5.60
7. artistic	- 5.50
8. emotional	5.46
9. pleasant	- 5.41
10. proud	- 5.31

TABLE 9

STEREOTYPES ABOUT FRENCH CANADIANS

Grade 10

HIGH FRENCH ACHIEVERS		LOW FRENCH ACHIEVERS	
French Canadians	T-value	French Canadians	T-value
1. talkative	- 8.58	1. proud	- 5.68
2. cheerful	- 8.29	2. talkative	- 5.60
3. likeable	7.80	3. religious	- 5.19
4. proud	- 7.79	4. friendly	5.16
5. active	7.75	5. artistic	- 5.07
6. pleasant	- 7.65	6. emotional	4.80
7. modern	7.55	7. excitable	4.78
8. emotional	7.39	8. intelligent	4.73
9. colourful	- 7.36	9. honest	- 4.38
10. kind	- 7.30	10. likeable	4.22

TABLE 10

STEREOTYPES ABOUT FRENCH CANADIANS

Grade 11

HIGH FRENCH ACHIEVERS		LOW FRENCH ACHIEVERS	
French Canadians	T-value	French Canadians	T-value
1. religious	-12.50	1. proud	- 7.41
2. talkative	- 9.91	2. colourful	- 6.90
3. excitable	9.27	3. cheerful	- 6.66
4. cheerful	- 9.04	4. artistic	- 6.65
5. emotional	8.74	5. talkative	- 6.32
6. colourful	- 8.60	6. friendly	6.28
7. intelligent	8.48	7. likeable	6.24
8. proud	- 8.40	8. kind	- 6.72
9. ambitious	- 8.03	9. polite	- 5.92
10. sensitive	7.88	10. modern	5.76

CHAPTER 7

TOWARD A THEORY: THE STUDIES IN PERSPECTIVE

This project began from a desire to determine whether a battery of tests could be developed using standard test-construction techniques which would provide reliable and valid indices of attitudinal variables reflecting an integrative motive toward the study of French as a second language. Previous research (Gardner and Lambert, 1959; 1972; Smythe, Stennett and Feenstra, 1972) had demonstrated that such variables were related to indices of French achievement, however, the psychometric properties of the tests themselves had never been considered. The present project then might be viewed simply as an attempt to "clean up" the tests and study once again their predictive capacity. Early on, however, it seemed that there was much more involved. By considering the possible motivational variables which might be related to French language acquisition, it seemed that a clearer delineation of the integrative motive could be achieved. Furthermore, it appeared meaningful to attempt to assess other motivational aspects such as a need for achievement, machiavellianism and anxiety which had been mentioned previously as potentially important even though they had not been studied (see for example, Gardner and Lambert, 1972).

Other questions remained, however. Would the motivational variables play different roles depending upon where the student was in the language learning process? Would the attitudinal/motivational variables change as a function of the training? Would they influence students' willingness to expose themselves to second-language training? Or could they be modified by intervention techniques used by teachers the world over to motivate their students?

These and related questions lead us to the realization that although previous studies had demonstrated relationships, there was not any true understanding of the reasons for these relationships. In point of fact, we knew what, but we did not know why or how!

Our initial strategy was simple. Let us try our hand at test construction, and obtain preliminary results on a relatively small sample of students in five different grade levels of French training. The result is described in Chapter 3. Having obtained these results, let us see whether they could be cross-validated on larger independent samples drawn from the same population studying in the same programs. These findings are contained in Chapter 4.

The results were encouraging! In fact, they were highly rewarding to us. The majority of the tests were highly reliable not only in the initial study and the cross-validation, but also when put to the ultimate test, that of test-retest reliability. Also, not only did the characteristics of the integrative motive predict second language achievement, they tended to form a unitary complex. At all grade levels, in both studies, there was ample evidence to suggest that individual differences in the elements of the integrative motive tended to be related to one another. The integrative motive was not simply a concept that we bandied about in discussions among ourselves. The various parts hung together giving empirical justification for our speculations. There was more, however, and we wonder now if we really yet understand the total significance. With students beginning their language study, the general underpinnings of the integrative motive--the non-ethnocentric, non-authoritarian orientations--are more highly related to French achievement generally than the more specific aspects of the integrative motive such as attitudes toward the language community, or motivational intensity. The specific aspects play a greater role later on in the second-language acquisition process. Is it simply age and experience, or is it something to do with developing some facility with the language that produces this effect? We don't know, yet! We have some hunches, however, and these are spelled out in later sections.

In Chapters 3 and 4 we also found that further training in French doesn't necessarily develop a warm accepting attitude toward the French community, the language learning situation, and other social objects associated with learning French. On the contrary, the results suggested that over the five years, there is initially an exuberance and a warmth associated with the experience which tends to wane in the intermediate years, but which begins to show increased positiveness with further years of study. We asked ourselves whether this might be due to the make-up of the samples at each grade level. This led us to the hypothesis that maybe there were good reasons for a phenomenon long recognized but often only whispered about--the foreign language drop-out.

In Chapter 5, we put our hypotheses and speculations to an empirical test. We asked, given that students become aware in grade 9 that French was an optional subject do they drop out because they lack the intelligence, the aptitude or the motivation? Or are these factors irrelevant? We suspected, because of the beginnings of our own theorizing and importantly some findings presented by Bartley (1969, 1970), that the motivational variables would be implicated.

We were surprised (and delighted) to find, however, that motivational indices obtained in the previous years, were generally better and more stable predictors of who would drop out of the program than were the indices of intelligence, language aptitude, or even objective measures of French achievement. We find such results exciting! Teachers can do little to modify students' intelligence or language aptitude, and though they try, they need the student's cooperation to promote French achievement. They can, however, attempt to improve students' motivation, and modify their attitudes. In fact, as indicated in Chapter 1, this is often a goal of second-language programs.

The availability of the tests we had developed allowed us to determine whether one such attempt to modify attitudes was successful.

There we compared students on various characteristics of the integrative motive before and after an excursion to Quebec City. Specific motivational attributes such as motivational intensity did not change. The students weren't "turned on" to French as a result of their trip. They were, however, more interested in and receptive to the French Canadian culture, they expressed more favourable attitudes toward French Canadians, and of even greater significance they were more integratively oriented toward their study of French. In short, the attitudinal basis of the integrative motive was modified. And after only four days exposure to the French Canadian culture! Clearly, further research on such incentive programs is called for.

Our research also forced us to consider the notion of consensual beliefs concerning the characteristics of various social objects. When applied to cultural or ethnic groups, such beliefs are referred to as ethnic stereotypes. Here too we obtained some interesting findings. In our research (see Chapter 6) we investigated stereotypes about English Canadians, French Canadians, the French course, the French teacher, and the English course. The stereotypes about English and French Canadians were both highly favourable, but contrary to popular expectations, we could find no evidence to suggest that training in French appreciably influenced the content of the stereotypes. We did find that the stereotypes about the French course and the French teacher were also highly favourable though, particularly in the mid-grades (grades 9 and 10), students agreed that the French course was difficult. Largely because of these results, we raised the possibility that the evaluative nature of stereotypes about social objects related to the acquisition of a second language might influence the level of achievement in a community. We, of course, were not able to test this hypothesis directly, but we were able to make an indirect test by comparing the stereotypes of successful vs unsuccessful students. The findings confirmed our expectations in that the stereotypes of the two types of students were in fact different. Although we focused our attention only on stereotypes about French Canadians, the results revealed that whereas clear stereotypes existed for the successful students, the less successful ones did not agree on the characteristics of French Canadians.

What does all of this have to say about the learning of a second language? Quite a bit it would seem, and in the following sections an attempt will be made to present the basis of a theoretical model which summarizes the data presented in this volume, as well as that in previous studies (see, Feenstra and Gardner, 1968; Gardner, 1960; 1966; Gardner and Lambert, 1959; 1973; Gardner and Santos, 1970; Rhandawa and Korpan, 1973; Smythe, Stennett and Feenstra, 1972).

Figure 1 presents the basic elements of the theoretical model. Inspection of this figure will reveal that the model focuses on four aspects, the Social Milieu, Individual Differences, Second Language Acquisition Contexts and Linguistic Outcomes. In discussing this model, attention will be on the student acquiring a second language in the school situation. Despite this emphasis, however, the model seems appropriate to any language learning situation, and although it is not elaborated the reader can consider its application to other situations. In attempting to integrate the material, the present authors uncovered a number of predictions which seem to follow logically from elements in the model. It seems quite possible, however, that the reader might derive other predictions which might serve to foster further research. At this point it seems clear that motivational variables of the type discussed in this volume are important in the acquisition of a second language, but obviously more research is required to clarify the mechanisms so that educators can work to capitalize on the attributes involved, and in that way improve even more the second language competencies of their students.

Insert Figure 1 About Here

The first element in Figure 1 refers to the Social Milieu, and is represented in the figure by the label, Cultural Expectations. It would seem a truism that the acquisition of a second language takes place in a cultural milieu, though this has seemingly been ignored in many discussions of second language acquisition. The label here is not meant to imply that a student of a language must be a resident of the culture whose language he is attempting to learn. This could be an asset, but in the present model, we are going beyond this. We are suggesting that the cultural milieu of the learner will influence his approach to the acquisition of a second language. For a very similar orientation, which however focuses on other aspects, see O'Doherty (1969) as reprinted in Oller and Richards (1973).

The term, Cultural Expectations, is one which encompases a number of facets. As used here it is meant to imply that a student is a member of a cultural group which has various expectations which are generally shared in the community. In some instances, these are made explicit but more often they are merely beliefs which evidence themselves in the behaviour of members of the community. As a member of this community, the student can be influenced by these expectations in the behaviour of a number of significant others. Examples of such significant others would be his parents, his siblings, his peer group, and his teachers.

There are many cultural expectations in a community, but among those which might be expected to influence a student's approach to the second-language learning situation are beliefs about the other language community (i.e., ethnic stereotypes), beliefs about the value of learning the language, and beliefs about whether a high level of competence in the language might be realized. To understand, how such expectations might operate, let us contrast two highly artificial communities with distinct expectations. In this example, there are only two sets of expectancies. This should not be taken to mean, however, that particular expectancies about a group are necessarily associated with particular expectancies concerning the value of learning the language, or whether expertise in the language can be achieved. Furthermore, although these expectancies are used as examples, there are undoubtedly many others which are probably relevant to the language learning situation. In point of fact, a useful research program could profitably consider investigating relevant expectancies.

Let us then consider two communities. Suppose Community A has a relatively negatively evaluative stereotype about the second-language group, that it does not place high value in learning the second language, and that it is generally believed that regardless of training, students cannot really acquire a high level of competence. By contrast, assume that Community B has opposite expectancies - viz., a positively evaluative stereotype, a perception that such second-language acquisition is valuable, and that students should be able to develop a high level of second-language competence. It might be expected that students from these two communities might differ appreciably in their approach to the second language program and in the level of competence achieved. In many of our discussions with teachers of a second language, we have often noted that some report having considerable difficulties in their programs, while others experience relatively little. Nonetheless, there does not appear to be any research bearing directly on this phenomenon. It would seem reasonably simple, however, to study language programs in a number of different communities, and the various expectations in these communities to determine whether the level of achievement, and the cultural expectations themselves covary.

Focusing on cultural expectations could have important implications. It has often been stated that residents of various European communities seem much more capable of acquiring second languages than North Americans. We are not here accepting or denying the validity of this belief, but proposing simply that such effects could be due to expectations about the feasibility of acquiring a second language. If it is "known", or expected that students will achieve communicative competence in a second language, it is reasonable to expect that such skill will be acquired. In North America, there is considerable doubt expressed about the possible success of second language programs. It is not unreasonable, therefore, that such programs do not produce bilinguals.

Cultural expectations might be expected to influence the student through the behaviour of significant others, though their effects might be somewhat insidious. In an earlier publication, Gardner (1968) describes how such expectations might operate on the parent in his interaction with the student, even though it is not intentional. In describing this process, Gardner (1968 - see Oller and Richards, 1973, p. 235-236) states:

> "I think it is meaningful to distinguish two roles of the parent which are relevant to his child's success in a second language program. For want of better labels, I'm going to refer to them as the active and passive roles, even though these labels are not completely descriptive. By the active role I mean that role whereby the parent actively and consciously encourages the student to learn the language. In the active role, the parent monitors the child's language learning performance, and to the extent that he plays this role he attempts to promote success. That is, the parent watches over the child and makes sure he does his homework, encourages him to do well, and in general reinforces his successes. I believe it is safe to assume that differences in the extent to which parents vary in this encouragement function would have some influence on the child's performance in any learning situation.
>
> The other type of role, the passive role, is more subtle, and I think more important, primarily because the parent would probably be unaware of it. By the passive role, I mean the attitudes of the parent toward the community whose language the child is learning. These attitudes are important, I believe, because they influence the child's attitudes, and it is my thesis (and I'll try to convince you of its validity) that the child's attitudes toward the other language community are influential in motivating him to acquire the second language.
>
> To contrast these roles, let me suggest one possible example. An English-speaking parent might actively encourage a child to learn French. He may stress the importance of doing well in that course, and might see that the child does his homework, and so forth. To himself, and to any observer, he might be perceived as actually helping the child. This is the active role. This same parent might hold positive or negative attitudes toward the French community. To the extent that he holds negative attitudes, he may be undermining his active role, by transferring to the child negative attitudes about the French community and thus reducing the child's motivation to learn the language. This is the passive role. By his own attitudes the parent may develop in the child doubts concerning the

real need for the language (particularly in the case where the parent does not speak that language). If the child fails an exam in French, he might anticipate some anger from his parent (who after all, is encouraging him to succeed), but he can always salve his own conscience by rationalizing that it is not really necessary to learn the language, as is evidenced by the fact that his parent gets along well enough without it. A negative attitude in the home can support this rationalization and thus possibly defeat the active role."

This subtle role, then, is the one by means of which Cultural Expectations may operate. The beliefs in the community might be expected to be mediated through the parent as well as other significant socializers. On the surface, in the active role, the behaviours and expressed beliefs are conducive to second-language achievement, but the other forces might also operate. Then too, it is always possible that the Cultural Expectations might express themselves in the active role. In the research presented to date, we have not attempted to differentiate between the two roles. The emphasis instead has been the net effect of both factors, as exemplified in the students' own reactions to the acquisition of a second language.

The various elements listed under Individual Differences in Figure 1 are characteristics of the student which develop from his interaction with his cultural milieu. This is true of each of the three major attributes, Intelligence, Language Aptitude and Motivation. Numerous researchers (see for example, Ferguson, 1954; 1956; Hunt, 1961) have discussed the role that environmental factors play in the development of intelligence. Furthermore, the concept of language aptitude refers to a set of verbal abilities which are important for second-language achievement, and except to say that much of their development would be mediated by factors in the home, further consideration will not here be given to those factors which would promote skill in them. Instead greater attention will be directed to the attributes of motivation.

In Figure 1, the attributes, Instrumental Orientation and Integrative Orientation are viewed as antecedents of the major attribute, Motivation. The model proposed here is that such orientations grow out of the cultural milieu, modified by the cultural expectations and interpreted through the home environment of the student. The net effect is the student's orientation toward the acquisition of a second language. Where the student views learning a second language as important for purely utilitarian reasons, it seems reasonable to consider this an instrumental orientation. Where, on the other hand, the student views the learning of the second language to be important in order to gain access to the other community, the term integrative orientation is more appropriate. It is possible that there are other orientations toward second language acquisition, though these two seem to be the most prominent in reasons given by students for studying a second-language.

An instrumental orientation reflects an interest in learning a second language for the sheer practical value of knowing the language. It seems reasonable to hypothesize that such an orientation would be facilitated by the particular cultural milieu of the student, and also that it might be developed by particular child rearing patterns in the home. Gardner and Santos (1970) found that in the Philippines an instrumental orientation was on the one hand related to some elements of second language achievement, and on the other to similar orientations on the part of the students' parents. This potency of an instrumental orientation is further indicated in a study conducted in Bombay (Lukmani, 1972), as well as research involving Franco-Americans learning French (Gardner and Lambert, 1972, though it is not generally predictive of achievement among Anglophones learning French in North America. As Gardner and Lambert (1972) conclude (p. 141) "Thus, it seems that in settings where there is an urgency about mastering a second language--as there is in the Philippines and in North America for members of linguistic minority groups--the instrumental approach to language study is extremely effective." The prepotency of the cultural milieu is emphasized all the more, however, by virtue of the fact that such relationships occur only in those cultural settings where bilingualism has support in the needs of the community. Furthermore, particularly in the Philippine setting (Gardner and Santos, 1970), the integrative motive was still more important for second language achievement than the instrumental orientation.

To a considerable extent, an instrumental orientation represents a type of grab-bag of motivational pressures. The focus of the instrumental orientation is on learning the language for personal gain, with little interest in the language _per se_. As investigated to date, this orientation has not focused on the communicative value of the language. Thus, any personal need which does not involve an interest in the communicative value of the language might be considered a precursor to an instrumental orientation. As such, deriving general rules concerning the correlates of an instrumental orientation is difficult. Following from previous research and theoretical speculations, we have investigated in the present studies such potential antecedents as a need for achievement, Machiavellianism and authoritarianism. Some relationships between an instrumental orientation and high scores on some of these measures have been obtained (see for example, Grades 9 and 11 in Chapter 4), but the relationships have not been consistent, and in general these variables have not been related to achievement in French. While, therefore, one might believe that an instrumental approach might facilitate the acquisition of second language skills specifically taught in the classroom, the results do not support this hypothesis particularly in cultural settings where bilingualism is not an urgent matter. As was noted previously, furthermore, even in at least some cultural contexts where bilingualism has clear instrumental value (as in the Philippines) the integrative motive is nonetheless the more prepotent.

Much of the research concerned with the motivational aspects of second language achievement has focused on the integrative orientation. As a result the antecedents or correlates of an integrative orientation have been reasonably well delineated. In earlier research in fact, it was postulated that a complex of variables tended to interact in such a way as to suggest it was meaningful to postulate a motivational syndrome referred to as an integrative motive (Gardner, 1966). This syndrome has appeared in the results of all of the studies reported here. As a consequence of these latter studies as well as the previous ones (Feenstra and Gardner, 1968; Gardner and Lambert, 1959; 1972; Smythe, Stennett and Feenstra, 1972), it is now possible to provide a reasonably comprehensive list of the characteristics of the integrative motive as it applies to learning French as a second language. It is quite possible that further research will uncover other attributes but for now the list includes such variables as, an Integrative Orientation, Attitudes toward French-speaking people, Attitudes toward learning French, Attitudes toward the French course and the teacher, feelings of ease in the French class, a strong motivation and desire to learn French, a general interest in foreign languages, and a non-prejudiced orientation toward other peoples in general. Indices of this latter orientation are reflected in a lack of respectively, ethnocentrism, authoritarianism and machiavellianism.

Summarizing all of the findings it seems possible now to define more precisely the nature of an integrative motive and to describe some of its antecedents in the child rearing practices of the home and the supports it obtains in the school. An integrative motive reflects a strong motive to learn the language of another cultural group because of a desire to communicate with members of that community. Implicit in this definition is positive affect toward that community. The focus, however, is on wanting to communicate directly with valued members of the second language community. In the extreme case, it might be suggested that the individual wants actually to become a member of that group, but such an orientation does not appear meaningful for adolescents learning a second language. It has, however, been revealed among some adult students of a second language, and has often been related to feelings of anomie, or dissatisfaction with one's own culture (see Lambert, 1956; 1963; 1967). It is probably because our research has been concerned with adolescents, that anomie is not a component of the integrative motive in the studies described here.

For adolescents in the North American culture, it seems reasonable that the integrative motive develops out of an accepting attitude toward outgroups fostered in the early home environment. This hypothesis is supported by findings that students' attitudes toward outgroups and general ethnocentric/authoritarian predispositions are highly related to similar reactions of their parents (Gardner and Santos, 1970; Gardner, Taylor and Feenstra, 1970). Children with such accepting attitudes will be more likely to become interested in the other language community than children lacking this approach. These general attitudes, moreover, will orient them to express an interest in learning foreign languages and will make them more receptive to the environment of the foreign language classroom. They will appreciate and enjoy the new sounds and ways of expressing ideas which they experience in the initial states of learning a second language. Furthermore, they will be more able to identify with the second-language teacher and develop strong emotional ties with her (or him, as the case may be).

The model proposed here, therefore, is that a total attitude toward the language class, the teacher and the language learning process will develop initially from a non-prejudiced attitude developed early in the home. One is reminded here, therefore, of both the _active_ and _passive_ roles that parents and other models might play.

Attention should be directed at this point to the important role that the language teacher can play. There is obviously a continuum of attitudes among students in the classroom. If the language teacher is a rewarding individual who can promote identification, it is possible that even for those students who do not have a strong accepting attitude such a teacher can serve to foster a greater acceptance of the language and the other group. For many students, this teacher might be the first representative of the other group with whom they have had direct contact. (It might be parenthetically noted here that the teacher need not necessarily be a member of the other language group. Her skill with the language can serve the purpose of identifying her, in the students' eyes, with the group.) This first emotional contact with the language is potentially so important, however, that the role of the teacher cannot be stressed too much.

This interpretation of the integrative motive suggests many hypotheses. One hypothesis is that integratively motivated students do, in fact, perceive the language learning situation as a rewarding one. To oversimplify slightly, the sounds etc., of the language will taste good to them. It might be predicted therefore that they will obtain greater satisfaction from the French classes, and will as a consequence evidence more participation (when compared with their normal classroom performance) than students lacking this motivation. Although we have not yet conducted such a study, it would be expected that participation in the French class, and affective reactions in the class would correlate substantially with the various components of the integrative motive. In the initial period of second-language learning among young adolescents, it might even be predicted that the assumed antecedents of the integrative motive (non-ethnocentrism, etc.) would show higher correlations with participation and it is only later on that the other characteristics would begin to relate appreciably to participation. Clearly, studies exploring these relationships would have important theoretical as well as practical implications.

Another hypothesis which develops from this interpretation is that the characteristics of the integrative motive should be highly predictive of whether students continue to study the language when given the opportunity to withdraw from the program. We saw in Chapter 4 that at all grade levels an integrative motive was consistently related to a stated intention to continue in the program. One might ask however whether similar results would be obtained in a study which looked at the actual behaviour of continuing in, or withdrawing from the program. This study we have conducted, though numerous replications are called for. Nonetheless the results presented in Chapter 5 support this prediction very clearly. Integratively motivated students remain in the program, those lacking this motivation withdraw. In chapter 5 it was demonstrated that the motivational attributes were consistently better predictors of who would remain in the program than were the indices of language aptitude. It is clear, therefore, that to maintain students in the program, attention should be directed to the attitudinal/motivational components. Streaming students on the basis of language aptitude might permit teachers to modify the programs to take into account the students strengths and weaknesses, but unless emphasis is placed on the attitudinal/motivational component students will still tend to withdraw (c.f., Bartley, 1969, 1970). And it is only when students remain in the program that teachers will have the opportunity to attempt to develop second language competence in them.

The concept of motivation then is a critical one in attempting to understand or explain the acquisition of a second language. When discussing motivation, however, it is not sufficient to speak merely of wanting to learn the second language. The task of acquiring a second language is a tedious and time consuming one, and without some basis for this motivation its effects will not be of a long term nature. The bulk of our research has focused on the integrative motive because it appears to be the more powerful determinant of second language acquisition. These variables can be classified, however, not in terms of the assumed antecedent orientation but rather in terms of their major referrent. Such a classification is useful because it serves to emphasize the various dimensions which should be considered when delineating a model of motivation. Figure 2 summarizes the major dimensions which appear necessary in such a motivational model, and indicates where the major attitudinal/motivational tests fit in this classification.

Insert Figure 2 About Here

The first category refers to Group Specific Attitudes. Under this category are variables which reflect attitudes toward the group which speaks the language. Examples of such variables are Attitudes toward French Canadians, and Attitudes toward the European French.

Category two subsumes a number of Course Related Characteristics (that is, motivational and attitudinal attributes which bear directly on the student's response to the classroom situation). Variables, which fall under this category are Attitudes toward Learning French, Attitudes toward the French Course, Attitudes toward the French teacher, and Parental Encouragement to learn French. The interpretation of the first three variables is relatively straightforward. The fourth, however, needs some explanation. It refers to the student's perception of the amount of encouragement he receives from his parents to learn French. One study (Feenstra and Gardner, 1968) demonstrated that such perceptions do not necessarily coincide with those of the parents. The additional variable, French Class anxiety is separated from the others in this category because although it also indicates the student's response to the French class situation, it is not directly related to the other motivational characteristics. It does, however, add another dimension to our consideration of motivational properties, in that in the research presented here, it has demonstrated negative relations (hence the minus sign) with French achievement. That is, students who experience considerable anxiety in the French Class are not as proficient in French as are students who are relaxed in the French Class. It is noteworthy that although research has also considered other indices of anxiety (such as for example, General Classroom Anxiety, and Audience Anxiety), it is only anxiety in the French Class which relates directly to French achievement. That is, it is not simply the anxious student who has difficulty acquiring French, but rather the one who for one reason or another experiences the French class as an anxiety provoking situation.

The third category of variables is labelled Motivational Indices because the variables reflect respectively the student's goals in French language study, the amount of effort he expends in trying to learn French, and his desire to learn French.

The fourth category of variables is identified as Generalized Attitudes in that it subsumes a number of measures which are not directly associated with either the French speaking community or the Course. A major variable in this category is interest in foreign languages, the interpretation of which is fairly straightforward. There are, furthermore, five other variables in this category which are of interest even though they are not always directly related to the other motivational aspects. Ethnocentrism refers to a generalized tendency to view one's own group as superior and all other groups as inferior, while Authoritarianism reflects a personality predisposition to prejudice. In the figure, each of these variables are preceded by negative signs to indicate that ethnocentrism and authoritarianism tend to be negatively related to achievement in French, or to the other motivational variables. Anomie, refers to feelings of dissatisfaction with one's role in society, Machiavellianism is an index of an individual's tendency to want to manipulate others, and Need Achievement is a measure of one's need to succeed in everything he does. These latter three variables have not consistently been associated with indices of French achievement, but where they have the relations have indicated that the anomic, non-Machiavellian, and high need achievement student is the most successful.

Figure 2 then serves as a convenient means of classifying the various attitudinal/motivational measures which have been investigated to date. Other measures might be suggested, but it seems reasonable that this classification at least will permit investigators to more accurately conceptualize the types of variables which might be considered. It should be emphasized furthermore that this classification is independent of the theoretical model proposed here which focuses on the concept of the integrative motive.

The three individual difference variables, intelligence, language aptitude and motivation play important and decidedly different roles in the acquisition of a second language and as indicated in Figure 1 these roles interact with the Second Language Acquisition Contexts. In Figure 1, two contexts are indicated. One referred to as Formal Language Training refers to the classroom situation where students are specifically taught second language skills. The other, labelled, Informal Language Experience, refers to those situations where second-language skills might be acquired in the absence of direct instruction. Instances of such experiences would be speaking with members of the other culture, watching movies or television in the other language, listening to radio broadcasts in that language, or reading the other language, etc. Here, the opportunity exists to develop facility, but formal instruction is absent.

Intelligence and language aptitude are functionally independent (see Carroll, 1962; Gardner and Lambert, 1965), though both would appear to have their greatest influence in the formal language training situation. Intelligence refers to a general class of abilities which account for individual differences in the ability to understand the nature of the task to be learned and/or the process to follow in learning the task (c.f., Carroll, 1963, p. 1061). It seems obvious, therefore, that differences in intelligence would reflect themselves in differences in school taught second-language skills because the more intelligent student would profit more from instruction. Although differences in intelligence might play some role in the acquisition of second language skills developed in informal language experiences, this role would seem minimal since formal instruction is not involved. Language aptitude, on the other hand refers to the ability to learn languages, and is typically assessed in terms of the students' verbal abilities. There have been developed a number of indices of language aptitude, but perhaps the most predictive is the Modern Language Aptitude Test developed by Carroll and Sapon (1959). This test was the result of considerable research by J. B. Carroll and his associates (1958; 1962; 1963) which suggested that language aptitude was comprised of at least four identifiable abilities (Carroll, 1963, p. 1088). These have been described as:

(a) Phonetic Coding. The ability to code auditory phonetic material in such a way that this material can be recognized, identified, and remembered over something longer than a few seconds.

(b) Grammatical Sensitivity. The ability to recognize the grammatical functions of words in sentence contexts.

(c) Rote Memory. The ability to learn a large number of associations in a relatively short time.

(d) Inductive Language Learning Ability. The ability to infer linguistic forms, rules, and patterns from new linguistic content itself with a minimum of supervision or guidance.

Examination of these abilities would suggest that they would play their greatest role in the formal situation because they would permit transfer from the new language to these abilities. Their importance would not seem so great, however, in the informal situation, if it is assumed that such experiences serve largely to reinforce behaviour patterns already developed. To the extent that some new skills were acquired differences in language aptitude would be expected to have a greater effect.

For these reasons solid lines are shown in Figure 1 joining language aptitude and intelligence to the area of Formal Language training, while broken lines join them to the Informal Language Experiences. The broken lines are meant to suggest that their influence would not be great.

Motivation is shown to be linked to both language acquisition contexts because it would appear important in both. The motivational properties, particularly the characteristics of the integrative motive, would seem to play an important role in Formal Language Training because they serve to keep the student in the program, influence his perceptions of the training situation and undoubtedly serve as the basis of many reinforcements which might be obtained in the classroom situation. They, moreover, would play an equally important role in determining the frequency with which the student would become involved in Informal Language Experiences, and his reactions to them. Since such experiences are largely voluntarily entered into, the attitudinal reactions to the language group, and the language, and the actual orientation toward language study would probably play an important role. In fact, if it is assumed that many of the true communicational skills are really developed in such situations, the model presented here would predict that the motivational properties would show their greatest relations with communicational skills. This, of course, is the most consistent finding!

Clearly, second-language competence develops in the two language acquisition contexts, but it seems reasonable to hypothesize that different skills would be developed in the two contexts. Typically, the formal classroom situation focuses instruction on such structural aspects as vocabulary, and grammar. Some attention is given to speaking and listening skills, but generally these are not stressed that much simply because of the restraints imposed by class time and class size. To the extent that certain second language skills are emphasized in the classroom situation relative to others, it seems reasonable to predict that individual differences in these skills will be related to differences in intelligence, language aptitude, and motivation, since all three variables have an influence in the formal situation. The important consideration in this respect is that the second-language skills involved are taught in the classroom. As previously noted by Rivers (1968) and Smythe, Stennett, and Feenstra (1972) students do indeed perform best on those skills stressed within a particular program.

Other skills might receive their greater development in informal language experience situations. This is not meant to imply that, for example, such speaking skills as fluency, pronunciation accuracy, or accent are not developed in the classroom. It seems more reasonable that most students will develop a more or less uniform level of competence as a result of their classroom experiences (the level would, of course, be influenced by the number of opportunities in the classroom to practice the language). Maximum differences between students would, however, be produced by the number of opportunities to use the language in informal situations. That is, in the present example, the speaking skills might be expected to be strengthened in interaction with members of the other community. It seems reasonable, however, that integratively motivated students would be more likely to seek out such experiences, and that as a result, differences in such motivational attributes would be related to differences in second-language skills developed in this context.

There is nothing magical in the relationships predicted. The assumption is made simply that some second language skills are developed largely as a result of formal instruction (especially in the type of situation studied in the research described here). Because of this, it is to be expected that those individuals who have the requisite intellectual capacity, who have the necessary verbal abilities, and who at the same time are strongly motivated to learn the second language should achieve a relatively high level of achievement. Assuming that there are other motivational varibles operating in a school situation over and above integrative motivational properties, as for example a need for achievement or a general studentship drive, it would be expected that intelligence and language aptitude would be better predictors of achievement in these school taught language skills than would characteristics of the integrative motive, even though such characteristics would enter into prediction.

On the other hand, characteristics of the integrative motive would be expected to be better predictors of those second language skills developed through informal language experiences. Intelligence and language aptitude would undoubtedly have some predictive capacity, but since such skills develop more from the opportunity for practice rather than specific training, those factors which orient the individual to voluntarily seek out these opportunities (i.e., the attitudinal concomitants of the integrative motive) would be expected to play the greater role.

The model outlined here is not a comprehensive theory. It represents a first approximation obtained from an attempt to integrate all of the findings obtained to date with respect to the relationship between French achievement and the three broad categories of intelligence, language aptitude, and motivation. It involves too a number of assumptions and speculations. As such, it represents the initial steps TOWARD A THEORY. The model, however, is potentially more dynamic than the previous static models that focus largely on the concept of language aptitude, and it places the second-language acquisition process in a larger social psychological context than has previously been considered. As a result we believe it has greater potential for theory building, and offers the possibility for developing exciting hypotheses that can be tested in subsequent research. We believe further, moreover, that it has significant implications for the language teacher because it focuses on the needs and aspirations (the human qualities) of the students who find themselves in the second-language acquisition process. We hope it represents therefore an important step forward!

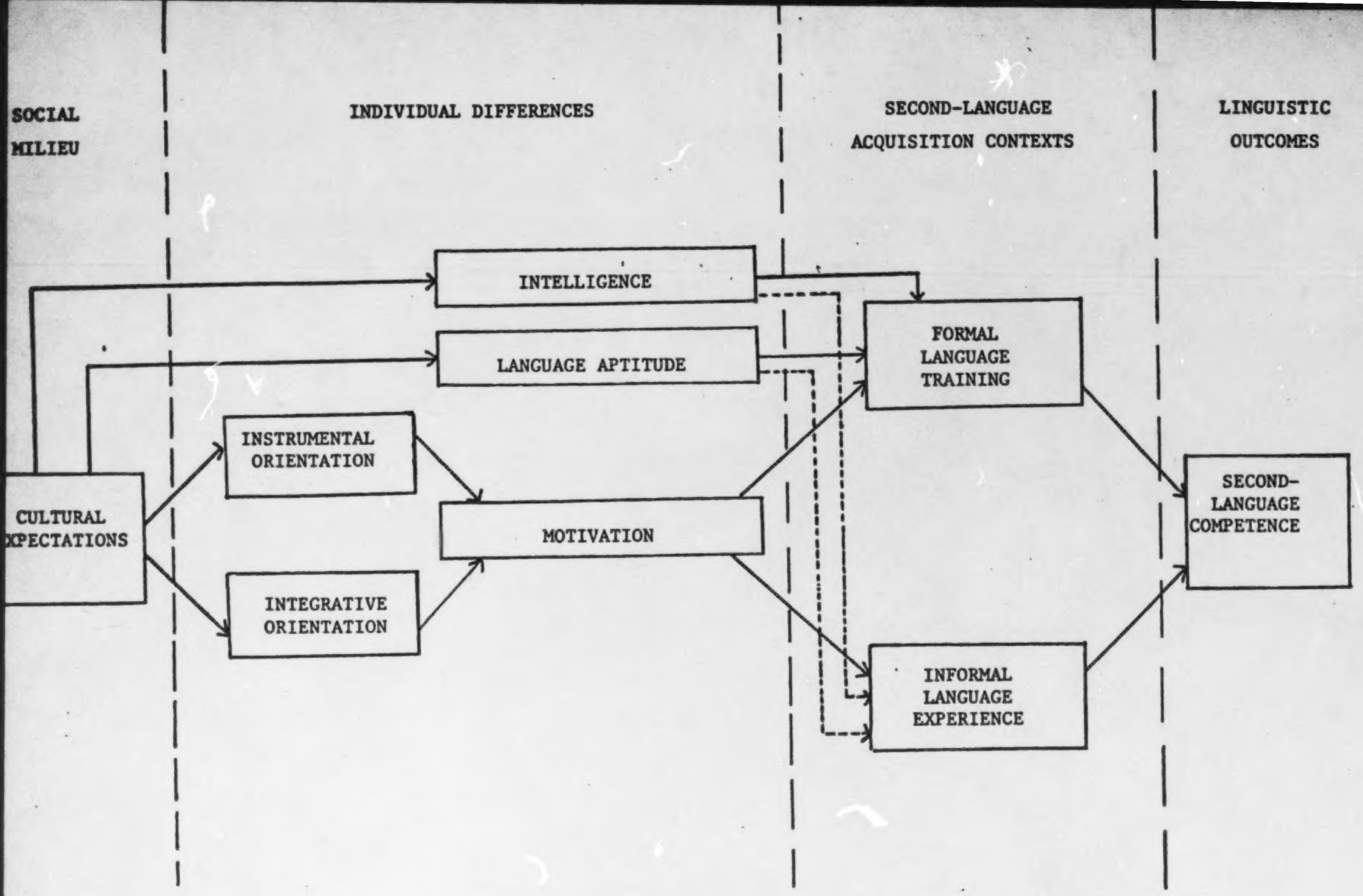
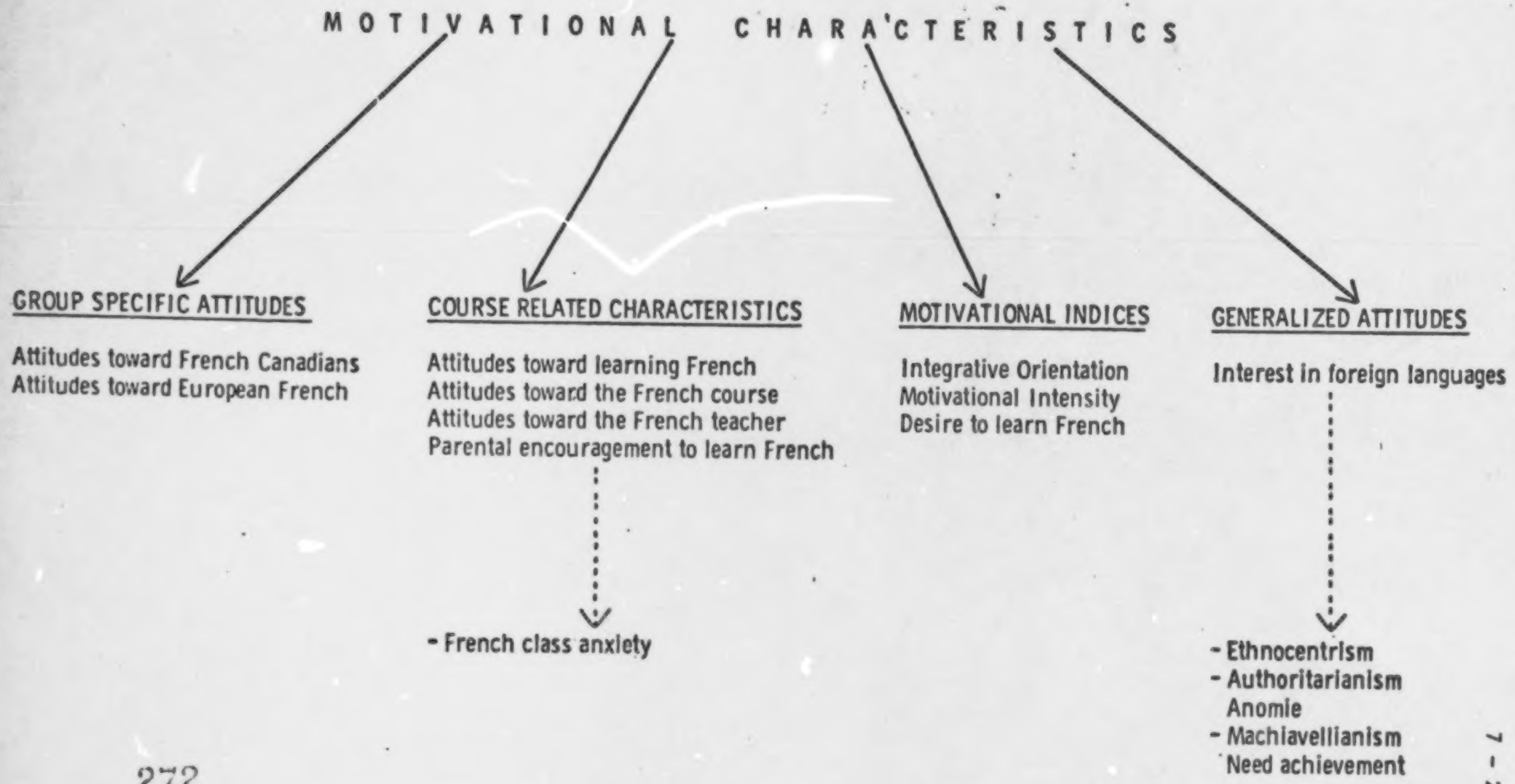

SOCIAL
MILIEU
INDIVIDUAL DIFFERENCES
SECOND-LANGUAGE
ACQUISITION CONTEXTS
LINGUISTIC
OUTCOMES
INTELLIGENCE
LANGUAGE APTITUDE
INSTRUMENTAL ORIENTATION
CULTURAL
XPECTATIONS
MOTIVATION
INTEGRATIVE ORIENTATION
FORMAL LANGUAGE TRAINING
INFORMAL LANGUAGE EXPERIENCE
SECOND-LANGUAGE COMPETENCE

Figure 1: Schematic Representation of the Theoretical Model



M O T I V A T I O N A L   C H A R A C T E R I S T I C S

GROUP SPECIFIC ATTITUDES

Attitudes toward French Canadians
Attitudes toward European French

COURSE RELATED CHARACTERISTICS

Attitudes toward learning French
Attitudes toward the French course
Attitudes toward the French teacher
Parental encouragement to learn French

- French class anxiety

MOTIVATIONAL INDICES

Integrative Orientation
Motivational Intensity
Desire to learn French

GENERALIZED ATTITUDES

Interest in foreign languages

- Ethnocentrism
- Authoritarianism
Anomie
- Machiavellianism
Need achievement

Figure 2: Aspects of the Motivation to Learn French

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APPENDIX A

CONTENTS

	PAGE
Face Sheets Used with Attitude Questionnaires	A - 1
Instructions For Items Using The Likert Procedure	A - 2
Tests Using The Likert Procedure:	
Attitudes Toward French Canadians	A - 3
French Class Anxiety	A - 5
Attitudes Toward Learning French	A - 6
General Classroom Anxiety	A - 7
Ethnocentrism (E-Scale)	A - 8
Attitudes Toward European French People	A - 9
Need Achievement	A - 11
Authoritarianism (F-Scale)	A - 12
Interest in Foreign Languages	A - 13
Machiavellianism	A - 14
Parental Encouragement	A - 15
Anomie	A - 16
Ratings of Instrumental Orientation	A - 17
Ratings of Integrative Orientation	A - 18
Instructions for Motivational Intensity and Desire To Learn French Scales	A - 19
Motivational Intensity Scale	A - 20
Desire to Learn French Scale	A - 23
Orientation Index	A - 26
Instructions for the Semantic Differential	A - 27
Canadian Indians	A - 29
English Canadians	A - 30
European French People	A - 31
French Canadians	A - 32
My English Course	A - 33a
My English Course (Validation Study)	A - 33b
My French Course	A - 34a
My French Course (Validation Study)	A - 34b
My French Teacher	A - 35a
My French Teacher (Validation Study)	A - 35b

A - 1

FACE SHEET USED WITH ATTITUDE QUESTIONNAIRES

You are being asked to complete this questionnaire as part of a larger project being conducted by the Language Study Group to investigate the learning of French in London. Your answers to any or all questions will be treated with the strictest confidence. Although we ask for your name at the bottom of this sheet, we do so only because we must be able to associate your answers to this questionnaire with those of other questionnaires which you will be asked to answer. It is important for you to know, however, that before the questionnaires are examined, your questionnaire will be numbered, the same number will be put on the section containing your name, and then that section will be removed. By following a similar procedure with the other questionnaires we will be able to match the questionnaires through matching numbers and avoid having to associate your name directly with the questionnaire.

For the results of this survey to be meaningful, it is important that you be as accurate and as frank as possible in your answers. If you do not want to answer any particular item, or for that matter the entire questionnaire, you do not have to. However, you should realize that the usefulness of your questionnaire will be lessened to the extent that you do not answer each item. We, therefore, urge you to answer all items unless it is important to you personally to omit certain ones. If you have difficulties or questions about any of the items, please raise your hand and someone will come to your assistance.

THIS SECTION WILL BE REMOVED IMMEDIATELY AFTER THE QUESTIONNAIRE IS CODED

PLEASE PRINT:

Name ____________________ ____________ ____________ Sex Female ______
Last Name First Name Middle Initial Male ______

School ____ Age __________

INSTRUCTIONS FOR ITEMS USING THE LIKERT PROCEDURE

Following are a number of statements with which some people agree and others disagree. There are no right or wrong answers since many people have different opinions. We would like you to indicate your opinion about each statement by circling the alternative below it which best indicates the extent to which you disagree or agree with that statement.

Following is a sample item. Circle the alternative below the statement which best indicates your feeling.

1. Bobby Orr is the best player to have ever played in the National Hockey League.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree

In answering this question, you should have circled one of the above alternatives. Some people would circle Strongly Disagree, others would circle Strongly Agree, and still others would circle one of the alternatives in between. Which one you circled would indicate your own feelings based on everything you know and have heard. Note, there is no right or wrong answer. All that is important is that you indicate your personal feeling.

For each of the items on the following pages, we want you to give your immediate reactions. Don't waste time thinking about each statement. Give your immediate feeling after reading each statement. On the other hand, please do not be careless as it is important that we obtain your true feelings.

A - 3

ATTITUDES TOWARD FRENCH CANADIANS SCALE

* 1. French Canadians add a distinctive flavor to the Canadian culture.

2. The more I get to know French Canadians, the more I like them.

3. French Canadians have produced outstanding artists and writers.

* 4. The more I get to know the French Canadians, the more I want to be fluent in their language.

* 5. The French-Canadian heritage is an important part of our Canadian identity.

* 6. French Canadians have preserved much of the beauty of the old Canadian folkways.

* 7. I would like to know more French Canadians.

* 8. The French Canadian has every reason to be proud of his culture.

* 9. If Canada should lose the French culture of Quebec, it would indeed be a great loss.

*10. French Canadians are a very sociable, warm-hearted and creative people.

11. English-Canadian children can learn much of value by associating with French-Canadian playmates.

12. I would like to have a French-Canadian pen pal.

13. French Canadians are generous and hospitable to strangers.

14. The French-Canadian people, by learning both languages, show a greater interest in Canada than do English Canadians.

15. The French Canadians have maintained the importance of family life.

16. French Canadians are more polite than their English-speaking counterparts.

17. English Canadians can learn better ways of cooking, serving food, and entertaining from French Canadians.

18. Students should learn more French-Canadian history.

19. English Canadians should be more concerned about the problems of French Canadians.

*20. English Canadians should make a greater effort to learn the French language.

21. French Canadians really enjoy life.

*22. Some of our best citizens are of French-Canadian descent.

*23. Most French Canadians are so friendly and easy to get along with that Canada is fortunate to have them.

24. French-Canadian parents are very devoted to their children.

25. French Canadians have every right to protect their cultural identity.

26. Most French Canadians are active members of their community.

27. The religious beliefs of French Canadians are a positive force in this modern world.

28. French Canadians are very sincere in their actions.

29. French Canadians deserve more consideration from the rest of Canada.

30. French Canadians take pride in themselves and their culture.

FRENCH CLASS ANXIETY SCALE

1. I am embarrassed to say French words out loud.

2. I think my voice sounds funny saying French words.

* 3. I am afraid the other students will laugh at me when I speak French.

* 4. It embarrasses me to volunteer answers in our French class.

5. I would rather write answers in my French class than say them out loud.

6. I am worried about other students criticizing me when I speak French.

* 7. I get nervous and confused when I am speaking in my French class.

* 8. I never feel quite sure of myself when I am speaking in our French class.

9. I try to avoid speaking in French class as much as possible.

* 10. I always feel that the other students speak French better than I do.

11. It always upsets me when the teacher points out my mistakes in French class.

ATTITUDES TOWARD LEARNING FRENCH SCALE

* 1. I think that learning French is dull.

* 2. When I leave school I shall give up the study of French entirely because I am not interested in it.

* 3. Learning French is really great.

4. Living in Ontario, I see no use for French.

* 5. Learning French is a waste of time.

* 6. I plan to learn as much French as possible.

* 7. French is an important part of the school programme.

8. I think we should spend more time in school learning French.

* 9. I love learning French.

10. Most of the time I find the French lesson a bore.

* 11. I really enjoy learning French.

* 12. I would rather spend my time on subjects other than French.

* 13. I hate French.

14. I think it is important to learn to speak and read French.

A - 7

GENERAL CLASSROOM ANXIETY SCALE

* 1. I worry that I might forget my lines when I recite poems in front of the class.

2. I do not like acting in plays because I'm afraid people will laugh at me.

3. I feel embarrassed when I am asked to sing in front of others.

4. My knees shake when I recite in class.

5. I worry that I will make a mistake when I give a report in front of the class.

6. Sometimes my voice shakes when I recite in class.

* 7. I am very nervous if the whole class watches me while I am making something.

* 8. I always feel a bit nervous when I have to speak in class.

* 9. I do not like reciting in class because I might make a mistake and others would laugh at me.

* 10. I am too nervous to volunteer an answer in class.

ETHNOCENTRISM SCALE

* 1. The worst danger to real Canadianism during the last fifty years has come from foreign ideas and agitators.

2. Certain people who refuse to salute the flag should be forced to conform to such a patriotic action, or else be imprisoned.

* 3. Foreigners are all right in their place, but they carry it too far when they get too familiar with us.

4. Canada may not be perfect, but the Canadian way has brought us about as close as human beings can get to a perfect society.

* 5. It is only natural and right for each person to think that his family is better than any other.

* 6. Play fair with your own friends and let the other kids look out for themselves.

7. It would be better if teachers would be more strict.

8. Might makes right; the strong win out in the end.

* 9. There is only one right way to do anything.

* 10. People who do not believe that we have the best kind of government in the world should be made to leave the country.

* 11. If everything would change, this world would be much better.

* 12. Only people who are like myself have a right to be happy.

* 13. Teachers should tell children what to do and not try to find out what the children want.

14. We should not send any of our food to foreign countries, but should think of Canada first.

* 15. If a person does not watch out somebody will make a fool out of him.

ATTITUDES TOWARD EUROPEAN FRENCH PEOPLE SCALE

1. The European French have always contributed a great deal in the areas of art and literature.

2. Family life is very important to the European French.

3. The European French are noted for their excellent preparation of foods and beverages.

4. The European French are a very intelligent people.

* 5. I have always admired the European French people.

6. I would like to meet more European French people.

* 7. For the most part, the European French are sincere and honest.

* 8. The European French are very friendly and hospitable.

* 9. The more I learn about the European French, the more I like them.

10. European French people can be depended upon to do a good job in anything they attempt.

11. The European French have produced many outstanding world figures.

12. The European French way of life appears interesting and exciting.

13. The European French take much pride in themselves and their customs.

*14. The European French are considerate of the feelings of others.

15. The European French deserve much respect from the rest of the world.

16. The European French are generally well educated.

17. Canadian children can learn much of value by associating with European French playmates.

18. The more I learn about the European French, the more I want to be able to speak the French language.

19. The European French get along well with other people.

20. We should learn more in school about the European French and their way of life.

21. It would be interesting to visit France.

*22. The European French are trustworthy and dependable.

23. The European French understand the problems of others.

*24. I have a favourable attitude towards the European French.

25. The European French enjoy life to its fullest.

26. The European French have every right to be proud of their culture.

*27. The European French are a very kind and generous people.

28. The European French should be praised for their great achievements in science.

*29. The European French are cheerful, agreeable and good humored.

*30. I would like to get to know the European French people better.

NEED ACHIEVEMENT SCALE

Positively Worded Items.

*1. Even when people do not see what I do, I try to do things at a level of perfection.

*2. I hate to do a job half-heartedly.

*3. If I had to make a choice, I would prefer to do a job that was very hard for me, rather than one that was very easy.

*4. I enjoy hard work.

5. People should be more involved with their work.

6. Even when I have just finished an excellent piece of work, I feel that I must do something even better.

7. I cannot respect people who can be satisfied with being less than the best.

Negatively Worded Items.

*8. The many extra hours of work needed to do a job perfectly are simply not worth the effort.

*9. I am sure people seldom think of me as a hard worker.

*10. I don't stick to goals which prove hard to reach.

*11. I seldom set standards which are difficult for me to attain.

*12. I am not really very certain what I want to do or how to go about doing it.

*13. In my work I seldom do more than is necessary.

14. People rarely say I let my school work interfere with the other aspects of my life.

AUTHORITARIANISM SCALE

* 1. Obedience and respect for authority are the most important virtues children should learn.

* 2. What youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

* 3. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.

4. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.

* 5. No weakness or difficulty can hold us back if we have enough willpower.

6. Human nature being what it is, there will always be war and conflict.

* 7. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.

* 8. People can be divided into two distinct classes: the weak and the strong.

* 9. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.

*10. The true Canadian way of life is disappearing so fast that force may be necessary to preserve it.

*11. Nowadays more and more people are prying into matters that should remain personal and private.

*12. If people would talk less and work more, everybody would be better off.

A - 13

INTEREST IN FOREIGN LANGUAGES SCALE

* 1. I would study a foreign language in school even if it were not required.

* 2. I enjoy meeting and listening to people who speak other languages.

3. I would enjoy going to see foreign films in the original language.

* 4. I often wish I could read newspapers and magazines in another language.

* 5. I want to read the literature of a foreign language in the original.

* 6. I wish I could speak another language perfectly.

* 7. If I planned to stay in another country, I would make a great effort to learn the language even though I could get along in English.

* 8. Even though Canada is relatively far from countries speaking other languages, it is important for Canadians to learn foreign languages.

* 9. If I were visiting a foreign country I would like to be able to speak the language of the people.

*10. Studying a foreign language is an enjoyable experience.

*11. I would really like to learn a lot of foreign languages.

MACHIAVELLIAN SCALE

* 1. Never tell anyone the real reason you are doing something unless it is useful to do so.

* 2. Most people are basically good and kind. +

3. Since most people don't know what they want, it is only right that ambitious people talk them into doing things.

* 4. When you ask someone to do something, it is best to give the real reasons rather than ones that might seem more important. +

* 5. It is wise to flatter important people.

* 6. There is no excuse for lying to someone. +

7. Generally speaking men won't work hard unless they are forced to do so.

* 8. Anyone who completely trusts anyone else is asking for trouble.

* 9. To help oneself is good; to help others even better. +

*10. Honesty is the best policy in all cases. +

11. The best way to get along with people is to tell them things that will make them happy.

*12. Sometimes you have to cheat a little to get what you want.

13. Most people cannot be easily fooled. +

*14. Sometimes you have to hurt other people to get what you want.

15. You should do something only when you are sure it is right. +

+ Worded oppositely to Machiavellianism

A - 15

PARENTAL ENCOURAGEMENT

* 1. My parents really encourage me to study French.

* 2. My parents have stressed the importance French will have for me when I leave school.

* 3. My parents encourage me to practice my French as much as possible.

4. Whenever I have homework in French, my parents make sure I do it.

* 5. My parents feel that I should continue studying French all through school.

* 6. My parents feel that I should really try to learn French.

* 7. My parents feel that because we live in Canada, I should learn French.

* 8. My parents think I should devote more time to my French studies.

* 9. My parents urge me to seek help from my teacher if I am having problems with my French.

10. My parents feel that French should be a compulsory subject throughout public school and high school.

*11. My parents show considerable interest in anything to do with my French courses.

*12. My parents try to help me with my French.

ANOMIE SCALE

* 1. In Canada today, public officials aren't really very interested in the problems of the average man.

* 2. In spite of what some people say, the lot of the average man is getting worse, not better.

* 3. These days a person doesn't really know whom he can count on.

* 4. The state of the world being what it is, it is very difficult for the student to plan for his career.

* 5. It is hardly fair to bring children into the world with the way things look for the future.

* 6. Having lived this long in an English-speaking community, I'd be happier moving to a place where other languages are spoken.

* 7. In Ontario, it's whom you know, not what you know, that makes for success.

* 8. Compared to communities where other languages are spoken, it is harder to form close relationships in English-speaking communities.

* 9. I'm pretty sure there are more opportunities for success outside of Ontario.

*10. A person cannot expect to find life rewarding and interesting in a community where only one language is spoken.

RATINGS OF INSTRUMENTAL ORIENTATION SCALE

*1. Studying French can be important for me only because I'll need it for my future career.

*2. Studying French can be important for me becuase I think it will someday be useful in getting a good job.

*3. Studying French can be important for me because it will make me a more knowledgeable person.

4. Studying French can be important for me because it will make me appear more cultured.

5. Studying French can be important for me because I feel that no one is really educated unless he is fluent in the French language.

*6. Studying French can be important for me because other people will respect me more if I have a knowledge of a foreign language.

7. Studying French can be important for me because Ineed it in order to finish high school.

8. Studying French can be important for me because it will help me if I should ever travel.

RATINGS OF INTEGRATIVE ORIENTATION SCALE

*1. Studying French can be important for me because it will allow me to be more at ease with fellow Canadians who speak French.

2. Studying French can be important for me because it will help me to understand French Canadians and their way of life.

3. Studying French can be important for me because it will help me to appreciate the problems that French people have in a predominantly English-speaking country.

4. Studying French can be important for me because it will enable me to gain good friends more easily among French-speaking Canadians.

5. Studying French can be important for me because it will enable me to think and behave like French Canadians.

*6. Studying French can be important for me because I will be able to participate more freely in the activities of other cultural groups.

*7. Studying French can be important for me because it will allow me to meet and converse with more and varied people.

*8. Studying French can be important for me because it will enable me to better understand and appreciate French Canadian art and literature.

A - 19

INSTRUCTIONS FOR MOTIVATIONAL INTENSITY AND DESIRE TO LEARN FRENCH SCALES

Please answer each of the following items by circling the letter of the alternative which appears to be most applicable to you. We should like to remind you that no individual teacher will have access to the questionnaires or any other information which associates your responses to this questionnaire with your name. We would urge you to be as accurate as possible since the success of this investigation depends upon it.

MOTIVATIONAL INTENSITY SCALE

1. On the average, I spend the following amount of time doing homework in French:

   (a) less than 1 hour a week.
   (b) between one and two hours a week.
   (c) more than two hours a week.

2. If a French course were offered at my school during the summer, I would:

   (a) definitely enroll to further my knowledge in French.
   (b) not take it under any circumstances.
   (c) only enroll in it if I were failing French.
   (d) none of these (explain) ______________________________

*3. Considering how I study French, I can honestly say that I:

   (a) will pass on the basis of sheer luck or intelligence, because I do very little work.
   (b) really try to learn French.
   (c) do just enough work to get along.

*4. If my teacher wanted someone to do an extra French assignment, I would:

   (a) definitely not volunteer.
   (b) only do it if the teacher asked me directly.
   (c) definitely volunteer.

*5. When I hear a French song on the radio, I:

   (a) change the station.
   (b) listen to the music, paying attention only to the easy words.
   (c) listen carefully and try to understand all the words.

*6. When it comes to French homework, I:

   (a) just skim over it.
   (b) put some effort into it, but not as much as I could.
   (c) work very carefully, making sure I understand everything.

7. When I see directions written in French, I:

   (a) read them carefully and try to understand.
   (b) look for the English translation.
   (c) read them over, but give up if it gets difficult.

8. Compared to the other courses I take in school, I:

(a) do less work in French than any other course.
(b) work harder in French than any other course.
(c) do about as much work in French as I do in any other course.

* 9. If French were not taught in school, I would:

(a) not bother learning French at all.
(b) try to obtain lessons in French somewhere else.
(c) pick up French in everyday situations (i.e., read French books and newspapers, try to speak it whenever possible, etc...)
(d) none of these (explain) ________________________________

10. After I finish high school, I will probably:

(a) try to use my French as much as possible.
(b) make no attempt to remember the French I have learned.
(c) continue to improve my French (e.g., daily practice, night school, etc.)

11. If it were possible to spend part of the summer with a French-speaking family, I would:

(a) definitely go.
(b) not go under any circumstances.
(c) only go if I had to.

12. Compared to the other students in my French class, I think I:

(a) do less studying than most of them.
(b) study about as much as most of them.
(c) study more than most of them.

*13. When I have a problem understanding something we are learning in French class, I:

(a) just forget about it.
(b) immediately ask the teacher for help.
(c) only seek help just before the exam.

*14. I actively think about what I have learned in my French classes:

(a) hardly ever.
(b) once in awhile.
(c) very frequently.

*15. After I get my French assignments back, I:

(a) just throw them in my desk and forget them.

(b) always rewrite them, correcting my mistakes.
(c) look them over, but don't bother correcting mistakes.

*16. When I am in French class, I:

(a) never say anything.
(b) answer only the easier questions.
(c) volunteer answers as much as possible.

17. Outside of school I read French books and magazines:

(a) never.
(b) once in awhile.
(c) quite often.

18. I do my French homework with extra care:

(a) only when the assignments are to be handed in.
(b) fairly regularly, but not always.
(c) always even if it takes several hours.

*19. If there were a French T.V. station in London, I would:

(a) never watch it.
(b) try to watch it often.
(c) turn it on occasionally.

A - 23

DESIRE TO LEARN FRENCH SCALE

1. After I have been studying French for a short time, I find that I:

   (a) have a tendency to think about other things.
   (b) am interested enough to get the assignments done.
   (c) become very interested in what I am studying.

*2. If it were up to me whether or not to take French, I:

   (a) don't know whether I would take it or not.
   (b) would definitely take it.
   (c) would drop it.

*3. If there were French-speaking families in my neighbourhood, I would:

   (a) speak French with them as much as possible.
   (b) speak French with them sometimes.
   (c) speak French with them only if I had to.
   (d) never speak French with them.

4. When you have an assignment to do in French, do you:

   (a) do it immediately when you start your homework.
   (b) become completely bored.
   (c) put it off until all your other homework is completed.
   (d) other (explain) ______________________________

*5. If I had the opportunity to speak French outside school, I would:

   (a) never speak it.
   (b) speak it occasionally, using English whenever possible.
   (c) speak French most of the time, using English only if really necessary.

6. If I had a choice, I would like to:

   (a) attend a school where French is not taught.
   (b) go to a school where French is taught as a subject.
   (c) go to a school where only French is spoken.

7. I believe French should be taught to students:

   (a) beginning in grade 1.
   (b) only in grades 7 and 8.
   (c) beginning in grade 9.

8. During French classes, I:

(a) have a tendency to daydream about other things.
(b) become completely bored.
(c) become wholly absorbed in the subject matter.

* 9. During French class, I would like:

(a) to have only French spoken.
(b) to have a combination of French and English spoken.
(c) to have as much English as possible spoken.

*10. Compared to my other courses, I like French:

(a) the most.
(b) least of all.
(c) the same as all the others.

*11. If I had the opportunity to see a French play, I would:

(a) definitely go.
(b) go only if I had nothing else to do.
(c) not go.
(d) none of these (explain) ________________________________

12. I believe French should:

(a) be taught to all Grade 7 and 8 students.
(b) be taught only to those students who wish to study it.
(c) not be taught to anyone.

*13. I find studying French:

(a) very interesting.
(b) no more interesting than most subjects.
(c) not interesting at all.

*14. If I had the opportunity and knew enough French, I would read French magazines and newspapers:

(a) as often as I could.
(b) not very often.
(c) never.

15. When doing homework in French, I find that I:

    (a) become very interested in what I am doing.
    (b) do the work without much interest.
    (c) cannot keep my mind on what I am doing.

*16. If there were a French Club in my school, I would:

    (a) definitely not join.
    (b) be most interested in joining.
    (c) attend meetings once in awhile.

17. If I had the opportunity to change the way French is taught in our school, I would:

    (a) increase the amount of training required for each student.
    (b) keep the amount of training as it is.
    (c) decrease the amount of training required for each student.

*18. If the opportunity arose and I knew enough French, I would watch French T.V. programmes:

    (a) never.
    (b) sometimes.
    (c) as often as possible.

ORIENTATION INDEX

* I AM STUDYING FRENCH BECAUSE;

(a) I think it will some day be useful in getting a good job.

(b) I think it will help me to better understand French people and their way of life.

(c) It will allow me to meet and converse with more and varied people.

(d) A knowledge of two languages will make me a better educated person.

(e) Any other personal reason.

INSTRUCTIONS FOR THE SEMANTIC DIFFERENTIAL

The purpose of this part of the questionnaire is to determine your ideas and impressions about a number of things such as your French Course, French Canadians, European French people and the like. We call these things, concepts. In answering this section, you will be asked to rate a number of such concepts on a number of scales. On the following pages, there is a concept given at the top of the page, and below that a group of scales. You are to rate each concept on each of the scales in order.

Here is how you are to use the scales.

If the word at either end of the scale very strongly describes your ideas and impressions about the concept at the top of the page, you would place your check-mark as shown below:

Fair __X__:_____:_____:_____:_____:_____:_____ Unfair
OR
Fair _____:_____:_____:_____:_____:_____:__X__ Unfair

If the word at either end of the scale describes somewhat your ideas and impressions about the concept (but not strongly so), you would place your check-mark as follows:

Good _____:__X__:_____:_____:_____:_____:_____ Bad
OR
Good _____:_____:_____:_____:_____:__X__:_____ Bad

If the word at either end of the scale only slightly describes your ideas and impressions about the concept, you would place your check-mark as follows:

Hard _____:_____:__X__:_____:_____:_____:_____ Easy
OR
Hard _____:_____:_____:_____:__X__:_____:_____ Easy

If the word at either end of the scale doesn't seem to be at all related to your ideas and impressions about the concept, you would place your check-mark as follows:

Weak _____:_____:_____:__X__:_____:_____:_____ Strong

IMPORTANT

1. Place your check-mark in the middle of the spaces, not the edges.

Fast _____:__X__:_____:_____:X____:_____:_____
This Not This

2. Be sure you check every scale. Do not skip any.

3. Never put more than one check-mark on a single scale.

Before beginning, do the following example.

Snake

friendly _____:_____:_____:_____:_____:_____:_____ unfriendly

dangerous _____:_____:_____:_____:_____:_____:_____ safe

fast _____:_____:_____:_____:_____:_____:_____ slow

useful _____:_____:_____:_____:_____:_____:_____ useless

In this example, the concept was snake, and you should have placed one check-mark on each of the four scales. Your answers may have been like the following:

Snake

friendly _____:_____:_____:_____:__X__:_____:_____ unfriendly

dangerous __X__:_____:_____:_____:_____:_____:_____ safe

fast _____:_____:_____:_____:_____:__X__:_____ slow

useful _____:_____:_____:__X__:_____:_____:_____ useless

In this example, snake is seen as slightly unfriendly, extremely dangerous, somewhat slow, and neither useful nor useless. Your ratings may have been different depending upon what ideas and impressions you have of the concept, "snake". There are no right or wrong answers. We want you to indicate your own ideas and impressions.

If you have any questions, please ask them now.

In answering this part of the questionnaire, work quickly and don't stop to think about each scale. It is your immediate impressions in which we are interested.

This scale omitted in Validation Study.

CANADIAN INDIANS

primitive _____:_____:_____:_____:_____:_____:_____ modern
artistic _____:_____:_____:_____:_____:_____:_____ inartistic
pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant
bad _____:_____:_____:_____:_____:_____:_____ good
likeable _____:_____:_____:_____:_____:_____:_____ unlikeable
lazy _____:_____:_____:_____:_____:_____:_____ industrious
patient _____:_____:_____:_____:_____:_____:_____ impatient
unreliable _____:_____:_____:_____:_____:_____:_____ reliable
colourful _____:_____:_____:_____:_____:_____:_____ colourless
active _____:_____:_____:_____:_____:_____:_____ passive
unathletic _____:_____:_____:_____:_____:_____:_____ athletic
dependable _____:_____:_____:_____:_____:_____:_____ undependable
dishonest _____:_____:_____:_____:_____:_____:_____ honest
calm _____:_____:_____:_____:_____:_____:_____ excitable
trustworthy _____:_____:_____:_____:_____:_____:_____ untrustworthy
emotional _____:_____:_____:_____:_____:_____:_____ unemotional
unfriendly _____:_____:_____:_____:_____:_____:_____ friendly
loyal _____:_____:_____:_____:_____:_____:_____ disloyal
talkative _____:_____:_____:_____:_____:_____:_____ quiet
stupid _____:_____:_____:_____:_____:_____:_____ intelligent
sensitive _____:_____:_____:_____:_____:_____:_____ insensitive
humble _____:_____:_____:_____:_____:_____:_____ proud
inconsiderate _____:_____:_____:_____:_____:_____:_____ considerate
religious _____:_____:_____:_____:_____:_____:_____ non-religious
polite _____:_____:_____:_____:_____:_____:_____ impolite
ambitious _____:_____:_____:_____:_____:_____:_____ unambitious
kind _____:_____:_____:_____:_____:_____:_____ cruel
follower _____:_____:_____:_____:_____:_____:_____ leader
cheerless _____:_____:_____:_____:_____:_____:_____ cheerful
sincere _____:_____:_____:_____:_____:_____:_____ insincere

*All scales Used in
Validation Study.

*ENGLISH CANADIANS

patient ____:____:____:____:____:____:____ impatient

colourful ____:____:____:____:____:____:____ colourless

stupid ____:____:____:____:____:____:____ intelligent

considerate ____:____:____:____:____:____:____ inconsiderate

undependable ____:____:____:____:____:____:____ dependable

proud ____:____:____:____:____:____:____ humble

ambitious ____:____:____:____:____:____:____ unambitious

insensitive ____:____:____:____:____:____:____ sensitive

calm ____:____:____:____:____:____:____ excitable

religious ____:____:____:____:____:____:____ non-religious

sincere ____:____:____:____:____:____:____ insincere

unreliable ____:____:____:____:____:____:____ reliable

honest ____:____:____:____:____:____:____ dishonest

pleasant ____:____:____:____:____:____:____ unpleasant

primitive ____:____:____:____:____:____:____ modern

unemotional ____:____:____:____:____:____:____ emotional

follower ____:____:____:____:____:____:____ leader

trustworthy ____:____:____:____:____:____:____ untrustworthy

bad ____:____:____:____:____:____:____ good

polite ____:____:____:____:____:____:____ impolite

athletic ____:____:____:____:____:____:____ unathletic

cheerful ____:____:____:____:____:____:____ cheerless

unlikeable ____:____:____:____:____:____:____ likeable

lazy ____:____:____:____:____:____:____ industrious

unfriendly ____:____:____:____:____:____:____ friendly

passive ____:____:____:____:____:____:____ active

disloyal ____:____:____:____:____:____:____ loyal

talkative ____:____:____:____:____:____:____ quiet

artistic ____:____:____:____:____:____:____ inartisitc

kind ____:____:____:____:____:____:____ cruel

This scale omitted in Validation Study.

EUROPEAN FRENCH PEOPLE

kind ____:____:____:____:____:____:____ cruel

undependable ____:____:____:____:____:____:____ dependable

calm ____:____:____:____:____:____:____ excitable

bad ____:____:____:____:____:____:____ good

modern ____:____:____:____:____:____:____ primitive

dishonest ____:____:____:____:____:____:____ honest

cheerful ____:____:____:____:____:____:____ cheerless

friendly ____:____:____:____:____:____:____ unfriendly

colourless ____:____:____:____:____:____:____ colourful

artistic ____:____:____:____:____:____:____ inartistic

disloyal ____:____:____:____:____:____:____ loyal

reliable ____:____:____:____:____:____:____ unreliable

patient ____:____:____:____:____:____:____ impatient

emotional ____:____:____:____:____:____:____ unemotional

passive ____:____:____:____:____:____:____ active

insincere ____:____:____:____:____:____:____ sincere

pleasant ____:____:____:____:____:____:____ unpleasant

proud ____:____:____:____:____:____:____ humble

impolite ____:____:____:____:____:____:____ polite

likeable ____:____:____:____:____:____:____ unlikeable

intelligent ____:____:____:____:____:____:____ stupid

untrustworthy ____:____:____:____:____:____:____ trustworthy

unambitious ____:____:____:____:____:____:____ ambitious

religious ____:____:____:____:____:____:____ non-religious

sensitive ____:____:____:____:____:____:____ insensitive

athletic ____:____:____:____:____:____:____ unathletic

quiet ____:____:____:____:____:____:____ talkative

industrious ____:____:____:____:____:____:____ lazy

inconsiderate ____:____:____:____:____:____:____ considerate

leader ____:____:____:____:____:____:____ follower

Validation Study.

*FRENCH CANADIANS

lazy _____:_____:_____:_____:_____:_____:_____ industrious

good _____:_____:_____:_____:_____:_____:_____ bad

non-religious _____:_____:_____:_____:_____:_____:_____ religious

calm _____:_____:_____:_____:_____:_____:_____ excitable

friendly _____:_____:_____:_____:_____:_____:_____ unfriendly

follower _____:_____:_____:_____:_____:_____:_____ leader

unreliable _____:_____:_____:_____:_____:_____:_____ reliable

considerate _____:_____:_____:_____:_____:_____:_____ inconsiderate

stupid _____:_____:_____:_____:_____:_____:_____ intelligent

emotional _____:_____:_____:_____:_____:_____:_____ unemotional

insincere _____:_____:_____:_____:_____:_____:_____ sincere

proud _____:_____:_____:_____:_____:_____:_____ humble

cheerful _____:_____:_____:_____:_____:_____:_____ cheerless

unlikeable _____:_____:_____:_____:_____:_____:_____ likeable

ambitious _____:_____:_____:_____:_____:_____:_____ unambitious

dependable _____:_____:_____:_____:_____:_____:_____ undependable

polite _____:_____:_____:_____:_____:_____:_____ impolite

impatient _____:_____:_____:_____:_____:_____:_____ patient

untrustworthy _____:_____:_____:_____:_____:_____:_____ trustworthy

primitive _____:_____:_____:_____:_____:_____:_____ modern

honest _____:_____:_____:_____:_____:_____:_____ dishonest

loyal _____:_____:_____:_____:_____:_____:_____ disloyal

insensitive _____:_____:_____:_____:_____:_____:_____ sensitive

pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant

colourless _____:_____:_____:_____:_____:_____:_____ colourful

artistic _____:_____:_____:_____:_____:_____:_____ inartistic

active _____:_____:_____:_____:_____:_____:_____ passive

kind _____:_____:_____:_____:_____:_____:_____ cruel

talkative _____:_____:_____:_____:_____:_____:_____ quiet

unathletic _____:_____:_____:_____:_____:_____:_____ athletic

A - 33a

MY ENGLISH COURSE

negative _____:_____:_____:_____:_____:_____:_____ positive
meaningless _____:_____:_____:_____:_____:_____:_____ meaningful
enjoyable _____:_____:_____:_____:_____:_____:_____ unenjoyable
educational _____:_____:_____:_____:_____:_____:_____ noneducational
useless _____:_____:_____:_____:_____:_____:_____ useful
pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant
valuable _____:_____:_____:_____:_____:_____:_____ worthless
noncontemporary _____:_____:_____:_____:_____:_____:_____ contemporary
organized _____:_____:_____:_____:_____:_____:_____ unorganized
rewarding _____:_____:_____:_____:_____:_____:_____ unrewarding
bad _____:_____:_____:_____:_____:_____:_____ good
backward _____:_____:_____:_____:_____:_____:_____ progressive
satisfying _____:_____:_____:_____:_____:_____:_____ unsatisfying
necessary _____:_____:_____:_____:_____:_____:_____ unnecessary
easy _____:_____:_____:_____:_____:_____:_____ difficult
unacceptable _____:_____:_____:_____:_____:_____:_____ acceptable
unimportant _____:_____:_____:_____:_____:_____:_____ important
clear _____:_____:_____:_____:_____:_____:_____ confusing
interesting _____:_____:_____:_____:_____:_____:_____ boring
uninformative _____:_____:_____:_____:_____:_____:_____ informative
dull _____:_____:_____:_____:_____:_____:_____ exciting
nice _____:_____:_____:_____:_____:_____:_____ awful
painful _____:_____:_____:_____:_____:_____:_____ pleasurable

MY ENGLISH COURSE

effortless _____:_____:_____:_____:_____:_____:_____ hard

satisfying _____:_____:_____:_____:_____:_____:_____ unsatisfying

complex _____:_____:_____:_____:_____:_____:_____ elementary

rewarding _____:_____:_____:_____:_____:_____:_____ unrewarding

important _____:_____:_____:_____:_____:_____:_____ unimportant

easy _____:_____:_____:_____:_____:_____:_____ difficult

colorless _____:_____:_____:_____:_____:_____:_____ colorful

tedious _____:_____:_____:_____:_____:_____:_____ fascinating

unnecessary _____:_____:_____:_____:_____:_____:_____ necessary

unenjoyable _____:_____:_____:_____:_____:_____:_____ enjoyable

simple _____:_____:_____:_____:_____:_____:_____ complicated

worthless _____:_____:_____:_____:_____:_____:_____ valuable

appealing _____:_____:_____:_____:_____:_____:_____ unappealing

interesting _____:_____:_____:_____:_____:_____:_____ boring

pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant

dull _____:_____:_____:_____:_____:_____:_____ exciting

awful _____:_____:_____:_____:_____:_____:_____ nice

useless _____:_____:_____:_____:_____:_____:_____ useful

meaningful _____:_____:_____:_____:_____:_____:_____ meaningless

good _____:_____:_____:_____:_____:_____:_____ bad

absorbing _____:_____:_____:_____:_____:_____:_____ monotonous

painful _____:_____:_____:_____:_____:_____:_____ pleasurable

informative _____:_____:_____:_____:_____:_____:_____ uninformative

confusing _____:_____:_____:_____:_____:_____:_____ clear

educational _____:_____:_____:_____:_____:_____:_____ noneducational

unimaginative _____:_____:_____:_____:_____:_____:_____ imaginative

disorganized _____:_____:_____:_____:_____:_____:_____ organized

progressive _____:_____:_____:_____:_____:_____:_____ backward

acceptable _____:_____:_____:_____:_____:_____:_____ unacceptable

negative _____:_____:_____:_____:_____:_____:_____ positive

MY FRENCH COURSE

pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant

informative _____:_____:_____:_____:_____:_____:_____ uninformative

meaningful _____:_____:_____:_____:_____:_____:_____ meaningless

confusing _____:_____:_____:_____:_____:_____:_____ clear

useless _____:_____:_____:_____:_____:_____:_____ useful

exciting _____:_____:_____:_____:_____:_____:_____ dull

painful _____:_____:_____:_____:_____:_____:_____ pleasurable

unorganzied _____:_____:_____:_____:_____:_____:_____ organized

valuable _____:_____:_____:_____:_____:_____:_____ worthless

backward _____:_____:_____:_____:_____:_____:_____ progressive

contemporary _____:_____:_____:_____:_____:_____:_____ noncontemporary

difficult _____:_____:_____:_____:_____:_____:_____ easy

unrewarding _____:_____:_____:_____:_____:_____:_____ rewarding

nice _____:_____:_____:_____:_____:_____:_____ awful

educational _____:_____:_____:_____:_____:_____:_____ noneducational

interesting _____:_____:_____:_____:_____:_____:_____ boring

bad _____:_____:_____:_____:_____:_____:_____ good

acceptable _____:_____:_____:_____:_____:_____:_____ unacceptable

unsatisfying _____:_____:_____:_____:_____:_____:_____ satisfying

enjoyable _____:_____:_____:_____:_____:_____:_____ unenjoyable

positive _____:_____:_____:_____:_____:_____:_____ negative

unimportant _____:_____:_____:_____:_____:_____:_____ important

necessary _____:_____:_____:_____:_____:_____:_____ unnecessary

MY FRENCH COURSE

colorful _____:_____:_____:_____:_____:_____:_____ colorless

pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant

positive _____:_____:_____:_____:_____:_____:_____ negative

bad _____:_____:_____:_____:_____:_____:_____ good

simple _____:_____:_____:_____:_____:_____:_____ complicated

useless _____:_____:_____:_____:_____:_____:_____ useful

fascinating _____:_____:_____:_____:_____:_____:_____ tedious

acceptable _____:_____:_____:_____:_____:_____:_____ unacceptable

painful _____:_____:_____:_____:_____:_____:_____ pleasurable

complex _____:_____:_____:_____:_____:_____:_____ elementary

interesting _____:_____:_____:_____:_____:_____:_____ boring

satisfying _____:_____:_____:_____:_____:_____:_____ unsatisfying

awful _____:_____:_____:_____:_____:_____:_____ nice

effortless _____:_____:_____:_____:_____:_____:_____ hard

absorbing _____:_____:_____:_____:_____:_____:_____ monotonous

unenjoyable _____:_____:_____:_____:_____:_____:_____ enjoyable

educational _____:_____:_____:_____:_____:_____:_____ noneducational

confusing _____:_____:_____:_____:_____:_____:_____ clear

imaginative _____:_____:_____:_____:_____:_____:_____ unimaginative

unrewarding _____:_____:_____:_____:_____:_____:_____ rewarding

organized _____:_____:_____:_____:_____:_____:_____ disorganized

valuable _____:_____:_____:_____:_____:_____:_____ worthless

meaningful _____:_____:_____:_____:_____:_____:_____ meaningless

easy _____:_____:_____:_____:_____:_____:_____ difficult

dull _____:_____:_____:_____:_____:_____:_____ exciting

backward _____:_____:_____:_____:_____:_____:_____ progressive

important _____:_____:_____:_____:_____:_____:_____ unimportant

unappealing _____:_____:_____:_____:_____:_____:_____ appealing

informative _____:_____:_____:_____:_____:_____:_____ uninformative

necessary _____:_____:_____:_____:_____:_____:_____ unnecessary

A - 35a

MY FRENCH TEACHER

considerate _____:_____:_____:_____:_____:_____:_____ inconsiderate
non-religious _____:_____:_____:_____:_____:_____:_____ religious
quiet _____:_____:_____:_____:_____:_____:_____ talkative
stupid _____:_____:_____:_____:_____:_____:_____ intelligent
excitable _____:_____:_____:_____:_____:_____:_____ calm
unambitious _____:_____:_____:_____:_____:_____:_____ ambitious
primitive _____:_____:_____:_____:_____:_____:_____ modern
artistic _____:_____:_____:_____:_____:_____:_____ inartistic
industrious _____:_____:_____:_____:_____:_____:_____ lazy
humble _____:_____:_____:_____:_____:_____:_____ proud
dependable _____:_____:_____:_____:_____:_____:_____ undependable
untrustworthy _____:_____:_____:_____:_____:_____:_____ trustworthy
good _____:_____:_____:_____:_____:_____:_____ bad
honest _____:_____:_____:_____:_____:_____:_____ dishonest
follower _____:_____:_____:_____:_____:_____:_____ leader
impolite _____:_____:_____:_____:_____:_____:_____ polite
unemotional _____:_____:_____:_____:_____:_____:_____ emotional
pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant
cheerful _____:_____:_____:_____:_____:_____:_____ cheerless
colourless _____:_____:_____:_____:_____:_____:_____ colourful
unfriendly _____:_____:_____:_____:_____:_____:_____ friendly
patient _____:_____:_____:_____:_____:_____:_____ impatient
reliable _____:_____:_____:_____:_____:_____:_____ unreliable
active _____:_____:_____:_____:_____:_____:_____ passive
likeable _____:_____:_____:_____:_____:_____:_____ unlikeable
insensitive _____:_____:_____:_____:_____:_____:_____ sensitive
cruel _____:_____:_____:_____:_____:_____:_____ kind
athletic _____:_____:_____:_____:_____:_____:_____ unathletic
sincere _____:_____:_____:_____:_____:_____:_____ insincere
loyal _____:_____:_____:_____:_____:_____:_____ disloyal

MY FRENCH TEACHER

friendly _____:_____:_____:_____:_____:_____:_____ unfriendly

organized _____:_____:_____:_____:_____:_____:_____ disorganized

dull _____:_____:_____:_____:_____:_____:_____ exciting

unreliable _____:_____:_____:_____:_____:_____:_____ reliable

bad _____:_____:_____:_____:_____:_____:_____ good

cheerless _____:_____:_____:_____:_____:_____:_____ cheerful

fascinating _____:_____:_____:_____:_____:_____:_____ tedious

inconsiderate _____:_____:_____:_____:_____:_____:_____ considerate

intelligent _____:_____:_____:_____:_____:_____:_____ stupid

suspicious _____:_____:_____:_____:_____:_____:_____ trusting

unimaginative _____:_____:_____:_____:_____:_____:_____ imaginative

patient _____:_____:_____:_____:_____:_____:_____ impatient

pleasant _____:_____:_____:_____:_____:_____:_____ unpleasant

uncreative _____:_____:_____:_____:_____:_____:_____ creative

industrious _____:_____:_____:_____:_____:_____:_____ lazy

efficient _____:_____:_____:_____:_____:_____:_____ inefficient

likeable _____:_____:_____:_____:_____:_____:_____ unlikeable

colorful _____:_____:_____:_____:_____:_____:_____ colorless

impolite _____:_____:_____:_____:_____:_____:_____ polite

competent _____:_____:_____:_____:_____:_____:_____ incompetent

sensitive _____:_____:_____:_____:_____:_____:_____ insensitive

sincere _____:_____:_____:_____:_____:_____:_____ insincere

unappealing _____:_____:_____:_____:_____:_____:_____ appealing

dependable _____:_____:_____:_____:_____:_____:_____ undependable

absorbing _____:_____:_____:_____:_____:_____:_____ monotonous

unapproachable _____:_____:_____:_____:_____:_____:_____ approachable

interesting _____:_____:_____:_____:_____:_____:_____ boring

openminded _____:_____:_____:_____:_____:_____:_____ opinionated

interested _____:_____:_____:_____:_____:_____:_____ disinterested

hindering _____:_____:_____:_____:_____:_____:_____ helping

APPENDIX B

CONTENTS

Teacher-Rating Form B - 1

Self-Rating Form B - 3

General Information Sheet B - 4

STUDENT'S NAME ______________________________ GRADE __________

TEACHER RATINGS OF STUDENTS' ORAL/AURAL SKILLS

Please assess the student's French achievement in relation to others in his grade on each of the following skills by circling the appropriate number.

1	2	3	4	5	6	7
poor		fair		good		excellent

If, for example, you feel the student's ability in a specific skill is between fair and good, you would circle number 4. Feel free to use all seven alternatives appropriately.

1. Grammatical construction when speaking French

1	2	3	4	5	6	7
poor		fair		good		excellent

2. French pronunciation

1	2	3	4	5	6	7
poor		fair		good		excellent

3. Use of French vocabulary when speaking

1	2	3	4	5	6	7
poor		fair		good		excellent

4. Fluency of speech in French

1	2	3	4	5	6	7
poor		fair		good		excellent

5. Use of full sentences rather than one word or phrase answers

1	2	3	4	5	6	7
poor		fair		good		excellent

6. Willingness to participate in French oral discussion

1	2	3	4	5	6	7
poor		fair		good		excellent

7. Basic understanding of spoken French

1	2	3	4	5	6	7
poor		fair		good		excellent

8. Ability to make himself understood by the class when he is speaking French

1	2	3	4	5	6	7
poor		fair		good		excellent

Please rate the student's general French ability in the following skills.

1. Oral skills

1	2	3	4	5	6	7
poor		fair		good		excellent

2. Aural skills

1	2	3	4	5	6	7
poor		fair		good		excellent

3. Appreciation of grammatical constructs

1	2	3	4	5	6	7
poor		fair		good		excellent

4. Appropriate use of vocabulary

1	2	3	4	5	6	7
poor		fair		good		excellent

SELF RATING FORM

Indicate your answers to the following statements by putting a check mark (✓) in the appropriate space. If you feel, for example, that you can write French "a little" you would put a check above the words "a little" on the scale:

I write French

________:	________:	________:	________:	________:	________:	________
not at all		a little		fairly well		fluently

If however, you feel you write French somewhere between "a little" and "not at all", you would put a check in the space between those two words on the scale:

I write French

________:	________:	________:	________:	________:	________:	________
not at		a little		fairly well		fluently

1. I write French

________:	________:	________:	________:	________:	________:	________
not at all		a little		fairly well		fluently

2. I understand French

________:	________:	________:	________:	________:	________:	________
not at all		a little		fairly well		fluently

3. I read French

________:	________:	________:	________:	________:	________:	________
not at all		a little		fairly well		fluently

4. I speak French

________:	________:	________:	________:	________:	________:	________
not at all		a little		fairly well		fluently

GENERAL INFORMATION SHEET

1. (a) During the last 12 months have you had the opportunity to use French outside of the school situation?

Yes __________ No __________

(b) If yes, in what ways and where ____

2. Please indicate all languages that are spoken in your home:

English ____________________
French ____________________
German ____________________
Italian ____________________
Spanish ____________________
Others (please specify) ____________________

3. Please indicate which language you speak well:

French ____________________
German ____________________
Italian ____________________
Spanish ____________________
Others (please specify) ____________________

APPENDIX C

CONTENTS

Correlation Matrix - Grade 7 - Initial Study C - 1

Correlation Matrix - Grade 8 - Initial Study C - 2

Correlation Matrix - Grade 9 - Initial Study C - 3

Correlation Matrix - Grade 10 - Initial Study C - 4

Correlation Matrix - Grade 11 - Initial Study C - 5

GRADE 7 - CORRELATION MATRIX

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	-.08	.73	.17	-.16	.72	.20	.44	.66	-.16	.59	.23	.59	.73	.58	.65	.21	.55	.43	.23	.67	.55	.32	.27	.11	.31
2		-.31	.62	.34	-.09	-.22	.13	-.27	.29	.01	.24	-.09	.00	-.35	-.28	-.28	-.13	-.02	-.15	-.20	-.11	-.23	-.22	-.15	-.16
3			.12	-.26	.63	.27	.38	.81	-.29	.57	.09	.68	.67	.81	.85	.27	.51	.44	.20	.78	.67	.38	.37	.25	.31
4				.11	.16	-.10	.22	.08	.19	.18	.21	.11	.21	.03	.08	.00	.05	.03	-.24	.14	.23	.04	.10	.08	.03
5					-.12	-.30	.31	-.24	.44	-.14	.56	-.07	-.10	-.28	-.34	-.03	-.14	-.11	.01	-.27	-.31	-.22	-.41	-.26	-.40
6						.19	.49	.72	-.06	.51	.29	.62	.72	.49	.62	.19	.58	.56	.27	.52	.45	.20	.12	.03	.12
7							.04	.35	-.43	.20	-.17	.15	.13	.29	.24	.12	.29	.26	.14	.19	.32	.14	.12	.05	.09
8								.43	.01	.35	.55	.48	.40	.30	.34	.10	.38	.38	.17	.28	.13	.01	-.03	-.08	-.10
9									-.22	.54	.10	.69	.68	.69	.78	.34	.52	.47	.26	.69	.59	.33	.28	.12	.20
10										-.24	.32	-.19	-.15	-.38	-.31	-.09	-.26	-.14	-.24	-.39	-.42	-.08	-.29	-.24	-.19
11											.21	.68	.69	.54	.54	.11	.32	.22	.32	.58	.48	.15	.33	.24	.30
12												.23	.25	-.01	.04	-.02	.09	.11	-.04	.02	-.07	-.06	-.22	-.17	-.31
13													.75	.54	.61	.05	.44	.39	.28	.63	.49	.27	.15	.12	.22
14														.59	.64	.23	.46	.41	.28	.65	.55	.32	.17	.12	.22
15															.84	.30	.46	.34	.36	.71	.04	.30	.42	.25	.21
16																.35	.58	.50	.25	.80	.72	.39	.38	.26	.28
17																	.12	.14	-.10	.33	.24	.12	.15	-.01	.14
18																		.84	.39	.58	.62	.20	.15	.17	.16
19																			.31	.48	.52	.20	.04	.09	.06
20																				.28	.18	.09	.15	.12	.07
21																					.79	.31	.45	.30	.37
22																						.34	.42	.35	.33
23																							.38	.47	.36
24																								.66	.57
25																									.51
26																									

GRADE 8 - CORRELATION MATRIX

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	-.17	.70	.16	-.29	.70	.45	.10	.77	-.32	.63	.02	.65	.70	.60	.61	.42	.53	.59	.16	.74	.51	.43	.25	.29	.43
2		-.36	.52	.27	-.19	.00	-.06	-.26	.27	-.21	.01	-.20	-.23	-.27	-.22	-.19	-.12	-.02	.06	-.15	-.15	-.17	-.17	-.19	-.11
3			.06	-.24	.54	.43	.14	.73	-.32	.57	.03	.64	.67	.77	.74	.36	.52	.48	.14	.77	.50	.32	.32	.31	.16
4				.15	.07	-.09	.13	.07	.06	.03	.12	.01	.08	.07	.12	-.01	.15	.13	.11	.13	.03	.17	.13	.02	.12
5					-.34	-.26	.25	-.30	.44	-.17	.40	-.05	-.23	-.19	-.23	-.10	-.19	-.07	-.23	-.26	-.38	-.16	-.08	-.20	-.34
6						.41	.15	.75	-.36	.55	.07	.59	.73	.48	.58	.19	.65	.63	.16	.63	.55	.37	.25	.16	.46
7							.12	.48	-.39	.41	-.13	.40	.48	.48	.43	.23	.30	.29	.20	.46	.30	.22	.18	.09	.26
8								.23	.00	.04	.32	.17	.15	.16	.07	-.08	.02	.04	.19	.16	.05	.10	-.08	-.06	.00
9									-.37	.66	.06	.70	.83	.62	.69	.25	.55	.61	.09	.76	.53	.50	.18	.20	.33
10										-.24	.28	-.15	-.33	-.26	-.25	-.22	-.23	-.11	-.12	-.25	-.39	-.27	-.23	-.13	-.35
11											.05	.69	.67	.51	.58	.21	.42	.37	.18	.57	.36	.37	.23	.08	.37
12												.15	-.01	-.03	-.06	-.11	.04	.21	-.09	.05	.02	.06	-.04	.00	-.13
13													.78	.60	.64	.08	.46	.47	.12	.66	.39	.35	.26	.22	.35
14														.64	.75	.29	.52	.56	.23	.75	.51	.50	.29	.24	.43
15															.81	.38	.45	.41	.20	.72	.50	.40	.33	.27	.16
16																.39	.39	.39	.16	.72	.46	.39	.33	.23	.24
17																	.17	.19	.01	.29	.13	.18	.25	.30	.13
18																		.74	.19	.59	.54	.37	.19	.13	.29
19																			.17	.68	.48	.37	.22	.08	.21
20																				.34	.27	.22	.26	.06	.23
21																					.68	.48	.35	.31	.24
22																						.30	.22	.31	.22
23																							.33	.36	.46
24																								.78	.31
25																									.24
26																									

GRADE 9 - CORRELATION MATRIX

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	-.25	.52	-.13	-.08	.58	.02	-.01	.43	-.17	.30	.05	.28	.49	.45	.52	.30	.09	.30	.34	.35	.10	.17	.18	.17	.01	.23	.07
2		-.44	.67	.24	-.18	-.11	.07	-.41	.11	-.25	.17	-.30	-.43	-.26	-.24	-.06	-.06	-.11	-.20	-.40	-.09	-.19	-.36	-.30	-.19	-.13	-.30
3			-.14	-.18	.42	.22	.00	.74	-.29	.51	-.11	.53	.63	.70	.77	.27	.06	.25	.36	.75	.32	.22	.11	.24	.13	.10	.16
4				.12	-.07	-.08	.05	-.21	.10	.01	.13	-.01	-.16	-.13	-.06	.00	-.18	-.21	-.21	-.16	-.10	-.10	-.21	-.26	-.03	-.07	-.19
5					-.02	-.16	.53	-.17	.37	.00	.39	.00	-.24	-.07	-.22	-.29	.10	.11	-.01	-.09	-.06	-.29	-.27	-.22	-.19	-.19	-.30
6						.12	.07	.45	-.11	.42	.13	.29	.50	.38	.43	.27	.12	.37	.51	.34	.20	.17	.06	.13	.09	.08	.09
7							-.07	.38	-.37	.13	-.25	.20	.25	.33	.23	.12	.19	.11	.23	.15	.23	.06	.11	.02	.04	.08	.0[illegible]
8								.00	.18	.01	.42	.07	-.07	.08	-.13	-.41	.34	.34	.25	.06	.07	-.22	-.19	-.22	-.13	-.09	-.17
9									-.36	.45	-.01	.60	.67	.55	.64	.17	.12	.16	.44	.52	.24	.17	.20	.10	.08	.13	.11
10										-.01	.43	.00	-.21	-.37	-.26	-.24	-.27	-.14	-.21	-.26	-.27	-.08	-.11	-.05	-.01	.07	-.04
11											.13	.55	.54	.42	.48	.19	-.17	-.03	.11	.48	.09	.06	.24	.05	.00	-.09	.09
12												.21	-.01	-.09	-.06	-.21	-.14	.03	-.03	-.08	-.08	-.16	-.12	-.17	-.09	-.01	-.13
13													.65	.35	.44	-.03	-.08	.02	.24	.51	.17	.11	.22	-.01	.07	.00	.13
14														.43	.55	.30	-.05	.09	.33	.55	.21	.25	.34	.17	.17	.10	.26
15															.77	.23	.21	.32	.31	.58	.30	.18	.10	.07	.03	.03	.03
16																.40	.01	.23	.33	.62	.40	.26	.13	.18	.07	.11	.16
17																	-.15	-.08	.01	.19	.17	.19	.21	.24	.12	.06	.03
18																		.70	.58	.19	.30	-.06	.01	.07	.03	.[illegible]5	.15
19																			.66	.38	.36	-.03	-.17	.06	.00	.09	.08
20																				.36	.30	.16	.05	.08	.08	.22	.29
21																					.57	.10	.06	.03	.06	-.08	.15
22																						-.01	-.05	-.07	-.04	-.04	.05
23																							.48	.50	.51	.40	.46
24																								.43	.52	.31	.44
25																									.44	.41	.27
26																										.34	.35
27																											.22
28																											

GRADE 10 - CORRELATION MATRIX

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	.00	.53	.00	-.10	.42	.27	-.02	.37	-.18	.07	.09	.28	.37	.40	.43	.24	-.01	.23	.11	.29	.25	.25	.13	.20	.35	.25	-.03
2		-.35	.71	.20	.03	.13	.19	-.04	-.06	.00	-.09	-.17	-.15	-.16	-.26	.06	.09	.05	.17	-.19	-.02	-.45	-.27	-.36	-.31	-.25	-.25
3			-.13	-.04	.38	.33	.01	.70	-.08	.26	.12	.49	.44	.69	.69	.46	-.10	.16	-.02	.57	.48	.40	.25	.41	.53	.27	.30
4				.15	.01	-.06	.13	.11	.03	.09	.04	-.08	-.09	-.06	-.06	.06	-.05	-.05	.06	.07	.07	-.27	-.03	-.16	-.16	-.08	-.06
5					.01	.03	.51	.03	.37	.06	.35	.17	.01	-.04	-.03	-.04	.14	-.03	.09	-.03	.03	-.06	-.19	-.18	-.13	-.16	-.07
6						.31	.07	.45	.09	.25	.07	.47	.39	.28	.29	.23	.09	.36	.51	.32	.31	.06	.11	-.07	-.04	-.09	.00
7							.21	.35	-.22	.13	-.11	.14	.19	.43	.36	.46	-.12	.19	.17	.22	.18	.17	-.02	.25	.29	.15	.10
8								.12	.06	.09	.32	.11	-.05	.16	.05	.05	.12	.12	.13	.19	.12	-.09	-.30	-.20	-.07	-.09	-.02
9									-.01	.24	.08	.52	.51	.69	.68	.29	.08	.21	.30	.53	.42	.10	.02	.17	.21	.16	.09
10										-.07	.28	.20	.02	-.12	-.12	-.28	.01	-.10	-.02	-.02	-.11	.06	.09	-.12	-.08	-.16	.09
11											.17	.47	.30	.17	.19	.19	-.06	.08	.16	.31	.00	-.03	-.09	-.10	-.04	.02	-.01
12												.29	.22	.13	.08	-.10	-.03	.03	-.12	.07	.08	.14	.07	-.07	.14	.20	.12
13													.60	.31	.44	-.02	-.02	.14	.17	.36	.15	.17	.17	.15	.12	.13	.14
14														.43	.55	.20	.02	.02	.13	.37	.10	.11	.10	.18	.16	.24	.12
15															.79	.32	.00	.10	.13	.46	.42	.21	-.05	.25	.42	.21	.25
16																.31	.00	.04	.16	.56	.35	.24	.10	.43	.46	.37	.26
17																	.10	.07	.05	.24	.19	-.02	-.02	.06	.15	.06	-.02
18																		.46	.76	.01	-.02	-.13	-.22	-.14	-.08	-.06	.03
19																			.51	.35	.40	.05	-.01	.00	.11	.09	-.01
20																				.18	.11	-.12	-.21	-.17	-.12	-.09	-.06
21																					.61	.22	-.01	.27	.22	.04	-.03
22																						.17	.06	.24	.11	.02	.15
23																							.34	.66	.65	.52	.38
24																								.31	.31	.35	.37
25																									.63	.54	.38
26																										.65	.34
27																											.36
28																											

GRADE 11 - CORRELATION MATRIX

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	.07	.60	.12	-.40	.65	.39	-.05	.62	-.09	.48	-.18	.49	.65	.41	.56	.36	.21	.34	.16	.40	.15	.29	.32	.35	.34	.11
2		-.24	.69	.02	.05	-.14	.12	-.13	.10	.08	.24	-.07	.01	-.18	-.15	-.08	.17	.02	.12	-.21	-.02	-.14	-.11	-.22	-.11	-.17
3			-.06	-.23	.38	.43	.02	.77	-.12	.40	-.15	.60	.64	.70	.81	.42	.07	.14	-.03	.73	.31	.49	.45	.51	.33	.15
4				.13	.16	-.08	.06	.07	-.01	.05	.14	.03	.15	.04	.09	.02	.12	.19	.25	-.04	-.08	.03	.15	.06	.09	.02
5					-.30	-.17	.40	-.22	.25	-.21	.31	-.14	-.30	-.22	-.18	-.15	.03	-.12	-.12	-.07	-.01	-.18	-.18	-.19	-.25	-.07
6						.29	.11	.54	-.10	.46	-.26	.45	.54	.31	.43	.13	.40	.52	.50	.36	.10	.06	.11	.16	.13	-.03
7							.15	.50	-.44	.40	-.31	.36	.33	.53	.45	.31	.23	.27	.21	.35	.28	.27	.25	.16	.26	.18
8								.19	.02	-.12	.18	.12	.02	.12	.11	-.29	.21	.04	.16	.05	.27	-.08	.03	-.20	-.08	-.14
9									-.23	.36	-.20	.62	.70	.59	.74	.36	.21	.34	.26	.57	.23	.47	.28	.32	.32	.15
10										-.11	.42	-.07	-.28	-.34	-.24	-.30	-.14	-.25	-.16	-.22	-.15	-.16	-.27	-.17	-.12	-.20
11											-.20	.50	.44	.31	.39	.25	.04	.05	-.09	.40	-.06	.17	.12	.14	.09	.06
12												-.18	-.30	-.15	-.17	-.15	-.20	-.16	.02	-.25	.09	-.09	-.11	-.09	-.08	-.01
13													.71	.42	.57	.20	.21	.15	-.01	.58	.13	.18	.08	.13	.06	.03
14														.53	.70	.46	.27	.32	.12	.57	.02	.32	.23	.25	.24	.06
15															.75	.42	.10	.10	.06	.64	.31	.42	.46	.40	.35	.18
16																.46	.18	.26	.10	.65	.27	.45	.48	.43	.36	.19
17																	.04	.09	-.02	.32	.18	.17	.12	.11	.10	.12
18																		.68	.65	.20	.34	-.11	-.13	-.24	-.01	-.17
19																			.75	.24	.13	-.04	.03	.02	.12	.01
20																				.05	.27	.00	-.08	-.07	.08	.03
21																					.40	.26	.24	.33	.24	.08
22																						.18	.14	.16	.15	.13
23																							.74	.79	.61	.62
24																								.76	.62	.44
25																									.56	.53
26																										.30
27																										